

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Electric Power
Company and Wisconsin Gas LLC for Authority
to Adjust Electric, Natural Gas, and Steam Rates

Docket No. 5-UR-110

DIRECT TESTIMONY OF ANN E. BULKLEY

1 **I. INTRODUCTION**

2 **Q. Please state your name, occupation and business address.**

3 A. My name is Ann E. Bulkley. I am employed by The Brattle Group (“Brattle”) as a
4 Principal. My business address is One Beacon Street, Suite 2600, Boston, Massachusetts
5 02108.

6 **Q. On whose behalf are you submitting this direct testimony?**

7 A. I am submitting this direct testimony before the Wisconsin Public Service Commission
8 (“Commission”) on behalf of Wisconsin Electric Power Company (“WEPCO”) and
9 Wisconsin Gas (“WG”) (collectively, “We Energies” or the “Companies”).

10 **Q. Please describe your education and experience.**

11 A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and a
12 Master’s degree in Economics from Boston University, with over 25 years of experience
13 consulting to the energy industry. I have advised numerous energy and utility clients on a
14 wide range of financial and economic issues with primary concentrations in valuation and
15 utility rate matters. Many of these assignments have included the determination of the
16 cost of capital for valuation and ratemaking purposes. My resume and a summary of

1 testimony that I have filed in other proceedings are included as Ex.-WEPCO/WG-
2 Bulkley-1.

3 **Q. What is the purpose of your testimony?**

4 A. The purpose of my direct testimony is to present evidence and provide a recommendation
5 regarding the Companies' authorized return on equity ("ROE" or "cost of equity") for
6 their electric and natural gas utility operations in Wisconsin and to provide an assessment
7 of their proposed capital structure to be used for ratemaking purposes. My analyses and
8 recommendations are supported by the data presented in Ex.-WEPCO/WG-Bulkley-2(a)
9 through Ex.-WEPCO/WG-Bulkey-10c(b).¹ The overall rate of return is also supported
10 by the testimony of Joseph Zgonc, who provides evidence to support the Companies'
11 capital structures and costs of debt.

12 **Q. How is the remainder of your testimony organized?**

13 A. The remainder of my testimony is organized as follows:

- 14 • Section II provides a summary of my analyses and conclusions.
- 15 • Section III reviews the regulatory guidelines pertinent to the development of the
16 cost of capital.
- 17 • Section IV discusses current and projected capital market conditions and the
18 effect of those conditions on the Companies' cost of equity.
- 19 • Section V explains my selection of the proxy group, which consists of publicly-
20 traded companies with significant electric and/or natural gas operations.

¹ My testimony and supporting analyses rely, in part, on information obtained through a subscription with S&P Capital IQ Pro, and that information has been designated as confidential. Reproduction of any information, data or material, including ratings ("Content") in any form is prohibited except with the prior written permission of the relevant party. Such party, its affiliates and suppliers ("Content Providers") do not guarantee the accuracy, adequacy, completeness, timeliness or availability of any Content and are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such Content. In no event shall Content Providers be liable for any damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with any use of the Content. A reference to a particular investment or security, a rating or any observation concerning an investment that is part of the Content is not a recommendation to buy, sell or hold such investments or security, does not address the suitability of an investment or security and should not be relied on as investment advice. Credit ratings are statements of opinions and are not statements of fact.

- Section VI describes my analyses and the analytical basis for the recommendation of the appropriate ROE for the Companies.
- Section VII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for the Companies in this case.
- Section VIII assesses the proposed capital structure of the Companies as compared with the capital structures of the utility operating subsidiaries of the respective proxy group companies.
- Section IX presents my conclusions and recommendations for the market cost of equity.

II. SUMMARY OF ANALYSIS AND CONCLUSIONS

Q. What are the key factors considered in your analyses and upon which your recommended costs of equity for the Companies are based?

A. In developing my recommended ROE for the Companies, I considered the following:

- The United States Supreme Court decisions in *Hope* and *Bluefield*,² which established the standards for determining a fair and reasonable authorized ROE for public utilities, including consistency of the allowed return with the returns of other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.
- The effect of current and projected capital market conditions on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Companies' cost of equity.
- The Companies' regulatory, business, and financial risks relative to the proxy group of comparable companies, and the implications of those risks.

Q. How did you develop your recommended costs of equity and capital structures for the Companies?

A. I relied on the results of several analytical approaches to estimate the costs of equity for WEPCO and WG. I first developed separate proxy groups for WEPCO and WG that

² *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("*Hope*"); *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*").

1 consist of publicly-traded companies with electric and natural gas utility operating
2 subsidiaries (for WEPCO) and publicly-traded companies with natural gas utility
3 operating companies (for WG) that face risks generally comparable to those faced by
4 WEPCO and WG. As discussed in more detail in Section VI, I applied the Constant
5 Growth form of the Discounted Cash Flow (“DCF”) model and three different risk
6 premium models (*i.e.*, the Capital Asset Pricing Model (“CAPM”), the Empirical Capital
7 Asset Pricing Model (“ECAPM”), and the Bond Yield Risk Premium (“BYRP”)) model
8 to the proxy group to estimate the Companies’ ROE for ratemaking purposes. I have
9 relied on the results of multiple ROE estimation models considering that, as discussed in
10 Section IV, current and forward capital market conditions are projected to affect the
11 inputs and assumptions of the ROE estimation models over the period during which the
12 Companies’ rates will be effective.

13 My recommendations also consider company-specific business and financial risk
14 factors to estimate the investor-required cost of equity for the Companies. Although the
15 companies in my proxy group are generally comparable to WEPCO and WG, each
16 company is unique, with no two having exactly the same risk profiles. Accordingly, I
17 considered the Companies’ business and financial risks in the aggregate in comparison to
18 that of the proxy group companies when determining where the Companies’ ROEs fall
19 within the reasonable range of analytical results to account for any residual differences in
20 risk.

21 Finally, I considered the Companies’ proposed capital structures for the test year
22 in comparison to the capital structures of the utility operating subsidiaries of the
23 respective proxy group companies.

Q. What are the results of your ROE estimation models?

A. Figure 1 summarizes the range of results of my analyses for WEPCO and Figure 2 summarizes the range of results for WG.

Figure 1: Summary of Cost of Equity Analytical Results for WEPCO

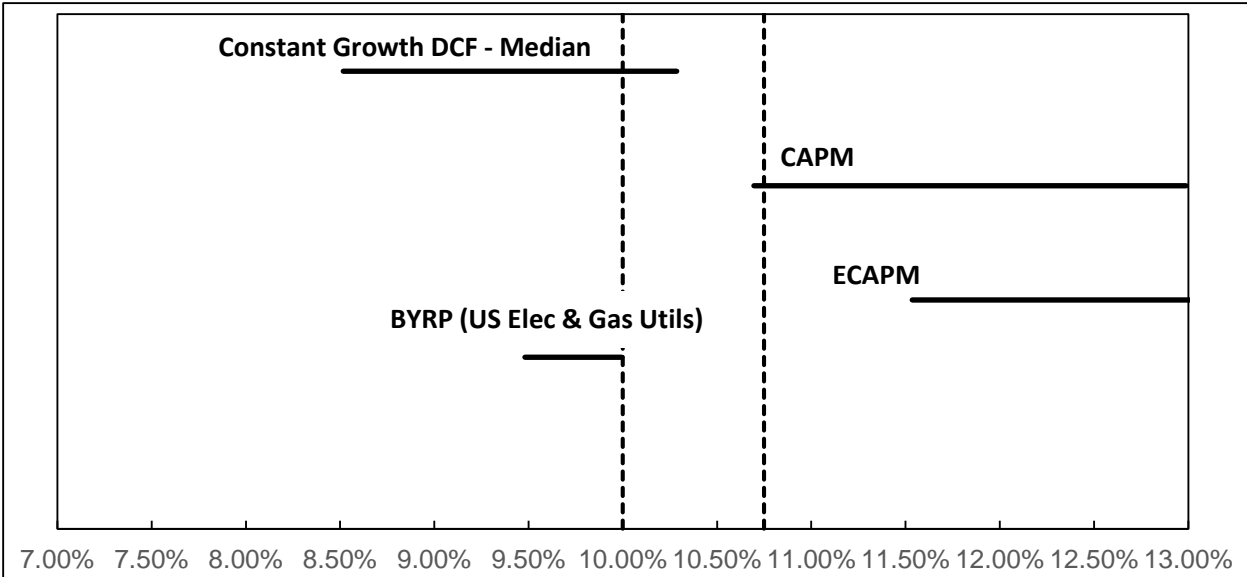
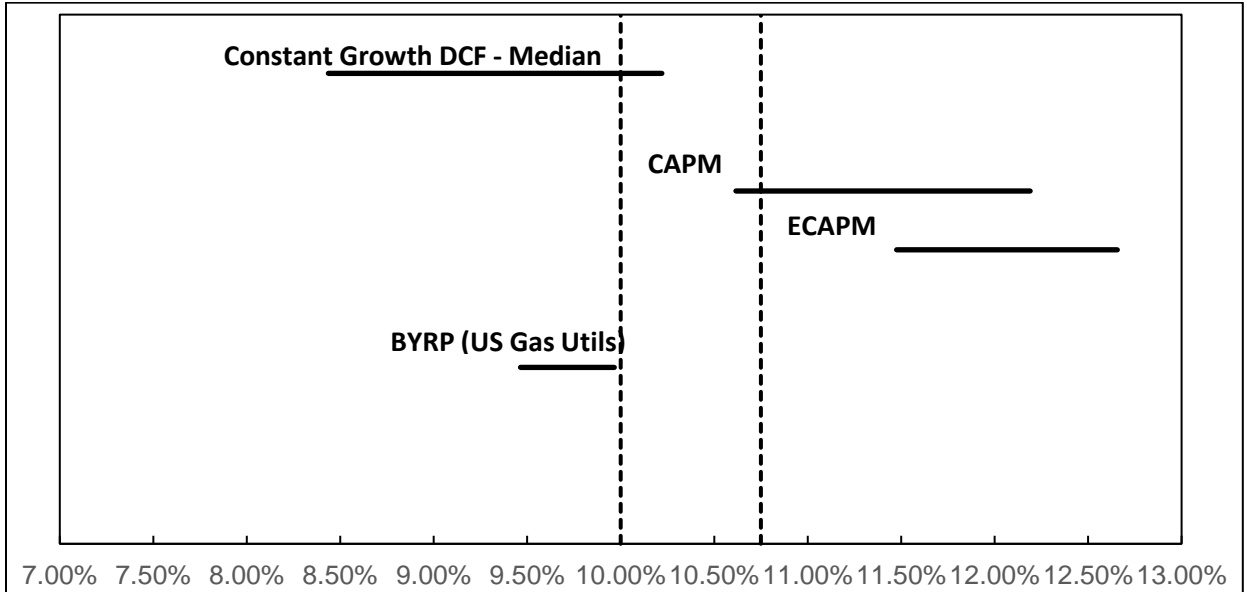


Figure 2: Summary of Cost of Equity Analytical Results for WG



As shown in Figures 1 and 2 (which are also presented in Ex.-WEPCO/WG-Bulkley-2(a) and Ex.-WEPCO/WG-Bulkley-2(b)), the range of results produced by the

ROE estimation models is relatively wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies. As I will discuss, capital market conditions are expected to affect the results of the ROE estimation models based on historical or current data. Specifically, utility stocks are expected to underperform as the economy continues to recover from the pandemic, thereby increasing dividend yields on utility stocks going forward, and interest rates are expected to increase from the relatively low levels resulting from the accommodative monetary policy implemented to assist the U.S. economy since the start of the pandemic.

Q. What is your recommended ROE and equity ratio?

A. Based on the analytical results presented in Figures 1 and 2, the projected capital market conditions, and the levels of regulatory, business, and financial risk faced by the Companies relative to their respective proxy groups, I conclude that a ROE in the range of 10.00 percent to 10.75 percent is reasonable for WEPCO, and a ROE in the range from 10.00 percent to 10.75 percent is reasonable for WG. Although the proxy groups are generally comparable in overall risk to WEPCO and WG, I also considered the level of regulatory, business, and financial risk faced by each Company relative to its proxy group to establish the range of reasonable returns. In order for the Companies to compete for capital on reasonable terms, those additional risk factors should be reflected in the Companies' respective authorized ROEs. In addition, the required ROEs are forward-looking estimates of returns required to attract capital on reasonable terms. Therefore, the analyses supporting my recommendation rely on forward-looking inputs and assumptions (*e.g.*, projected growth rates in the DCF model and a forecasted risk-free rate

1 and market risk premium in the three risk premium analyses). Considering these factors,
2 I conclude that the Companies' requested ROEs in this proceeding are reasonable: 10.00
3 percent for WEPCO and 10.20 for WG.

4 In order to determine the reasonableness of the Companies' proposed equity
5 ratios, I have reviewed the equity ratios of the utility subsidiary operating companies of
6 the proxy group companies. Based on this information, I conclude that the equity ratios
7 requested by the Companies are reasonable: 53.00 percent for WEPCO and 53.00 percent
8 for WG.

9 **III. REGULATORY GUIDELINES**

10 **Q. Please describe the guiding principles used in establishing the cost of capital for a**
11 **regulated utility.**

12 A. The United States Supreme Court's *Hope* and *Bluefield* cases established the standards
13 for determining the fairness or reasonableness of a utility's allowed ROE. Among the
14 standards established by the Court in those cases are: (1) consistency with other
15 businesses having similar or comparable risks; (2) adequacy of the return to support
16 credit quality and access to capital; and (3) that the result, as opposed to the methodology
17 employed, is the controlling factor in arriving at just and reasonable rates.³

18 **Q. Has the Commission provided similar guidance in establishing the appropriate**
19 **return on common equity?**

20 A. Yes. The Commission follows the precedents of the *Hope* and *Bluefield* cases by
21 acknowledging that utility investors are entitled to a fair and reasonable return. For

³ *Hope*, 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).

example, in Northern States Power Company-Wisconsin's test year 2018 rate case (Docket No. 4220-UR-123), the Commission summarized its standards for setting ROE:

The principal factor used to determine the appropriate return on equity is the investors' required return. Authorized returns less than the investors' required return would fail to compensate capital providers for the risks they face when providing funds to the utility. Such sub-par returns would make it difficult for a utility to raise capital on an ongoing basis. On the other hand, authorized returns that exceed the investors' required return would provide windfalls to utility investors as they would receive returns that are in excess of reasonable expectations.⁴

Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that is adequate to attract capital at reasonable terms?

A. A return that is adequate to attract capital at reasonable terms will enable the Companies to continue to provide safe, reliable electric and natural gas service while maintaining their financial integrity. That return should be commensurate with returns required by investors elsewhere in the market for investments of comparable risk. If it is lower, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby impairing the Companies' ability to attract capital at reasonable cost. To the extent the Companies are provided a reasonable opportunity to earn a market-based cost of capital, neither customers nor shareholders are disadvantaged.

Q. Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?

A. Yes. Utilities compete directly for capital with other investments of similar risk, which include other natural gas and electric utilities. Therefore, the ROE authorized for a utility sends an important signal to investors regarding whether there is regulatory support for

⁴ Public Service Commission of Wisconsin, Final Decision, Docket No. 4220-UR-123, at 29-30.

1 financial integrity, dividends, growth, and fair compensation for business and financial
2 risk. The cost of capital represents an opportunity cost to investors. If higher returns are
3 available for other investments of comparable risk, investors have an incentive to direct
4 their capital to those investments. Thus, an authorized ROE significantly below
5 authorized ROEs for other natural gas and electric utilities can inhibit the utility's ability
6 to attract capital for investment in Wisconsin.

7 **Q. Does the fact that WEPCO and WG are owned by WEC Energy Group, Inc.**
8 **(“WEC”), a publicly-traded company, affect your analysis?**

9 A. No. In this proceeding, consistent with stand-alone ratemaking principles, it is
10 appropriate to establish the cost of equity for WEPCO and WG, not its publicly-traded
11 parent, WEC. However, more importantly, it is appropriate to establish a cost of equity
12 and capital structure that provide WEPCO and WG the ability to attract capital on
13 reasonable terms, both on a stand-alone basis and within WEC. Because WEPCO and
14 WG are subsidiaries of WEC, the Companies compete with the other WEC subsidiaries
15 for investment capital, which include utilities regulated by state commissions in
16 Michigan, Illinois, and Minnesota. In determining how to allocate its finite capital
17 resources, it would be reasonable for WEC to consider the authorized ROE of each of its
18 subsidiaries.

19 **Q. Are the authorized ROE and capital structure important to credit rating agencies?**

20 A. Yes. The credit rating agencies consider the authorized ROE and equity ratio for
21 regulated utilities to be very important for two reasons: (1) they help determine the cash
22 flows and credit metrics of the regulated utility; and (2) they provide an indication of the
23 degree of regulatory support for credit quality in the jurisdiction. The credit rating

1 agencies are particularly focused on these metrics and have instituted negative ratings
2 actions in reaction to regulatory commission decisions authorizing a cost of equity that is
3 deemed to increase risk by reducing future cash flow.

4 For example, most recently, changes made by the Arizona Corporation
5 Commission (“ACC”) to an Administrative Law Judge’s recommended order in an
6 Arizona Public Service Company (“APS”) rate proceeding caused credit rating agencies
7 to institute negative ratings actions. Specifically, the ACC reduced the authorized ROE
8 for APS from the ALJ-recommended 10.00 percent to 8.70 percent. With the ACC’s
9 reduction, Fitch downgraded the issuer default credit rating of APS from A to A-, and its
10 parent, Pinnacle West Capital Corporation (“PNW”) from A- to BBB+, citing heightened
11 business risk.⁵ Subsequently, Moody’s Investors Service (“Moody’s”) also downgraded
12 APS from A2 to A3 and PNW from A3 to Baa1.⁶ Moody’s noted that the downgrade
13 was a function of “the recent decline in Arizona regulatory environment following the
14 conclusion of the utility’s 2019 rate case as well as the organization’s weakened credit
15 metrics.”⁷

16 Guggenheim Securities LLC, an equity analyst that follows PNW, informed its
17 clients that:

18 [T]he “Arizona Corporation Commission is now confirmed to be the
19 single most value destructive regulatory environment in the country as far
20 as investor-owned utilities are concerned.”⁸

⁵ FitchRatings, “Fitch Downgrades Pinnacle West Capital & Arizona Public Service to ‘BBB+’; Outlooks Remain Negative,” October 12, 2021.

⁶ Moody’s Investors Service, “Rating Actions: Moody’s downgrades Pinnacle West to Baa1 and Arizona Public Service to A3,” November 17, 2021.

⁷ *Id.*

⁸ S&P Global Market Intelligence, “Pinnacle West shares tumble after regulators slash returns in rate case,” October 7, 2021.

1 Similarly, S&P Global Market Intelligence’s Regulatory Research Associates (“RRA”)
2 noted that this decision was “among the lowest ROEs RRA had encountered in its
3 coverage of vertically integrated electric utilities in the past 30 years.”⁹

4 **Q. What are your conclusions regarding regulatory guidelines?**

5 A. The ratemaking process is premised on the principle that, for investors and companies to
6 commit the capital needed to provide safe and reliable utility services, a utility must have
7 the opportunity to recover the return of, and the market-required return on, its invested
8 capital. Because utility operations are capital-intensive, regulatory decisions should
9 enable the utility to attract capital at reasonable terms under a variety of economic and
10 financial market conditions. Doing so balances the long-term interests of the utility and
11 its ratepayers.

12 The financial community carefully monitors the current and expected financial
13 condition of utility companies and the regulatory framework in which they operate. In
14 that respect, the regulatory framework is one of the most important factors in both debt
15 and equity investors’ assessments of risk. The Commission’s order in this proceeding,
16 therefore, should establish rates that provide the Companies with a reasonable
17 opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms
18 under a variety of economic and financial market conditions; (2) sufficient to ensure good
19 financial management and firm integrity; and (3) commensurate with returns on
20 investments in enterprises with similar risk.

⁹ S&P Global Market Intelligence, RRA Regulatory Focus, “Commission accords Arizona Public Service Company a well below average ROE,” October 8, 2021.

1 **IV. CAPITAL MARKET CONDITIONS**

2 **Q. Why is it important to consider capital market conditions in the estimation of the**
3 **investor-required return on equity?**

4 A. The ROE estimation models rely on market data that are either specific to the proxy
5 group, in the case of the DCF model, or to the expectations of market risk, in the case of
6 the risk premium models. Therefore, results of the ROE estimation models can be
7 affected by prevailing market conditions when the analysis is performed. Because the
8 ROE that is established in a rate proceeding is intended to be forward-looking, the analyst
9 must use current and projected market data—specifically stock prices, dividends, growth
10 rates and interest rates—in the ROE estimation models to estimate the required return for
11 the subject company.

12 As discussed in the remainder of this section, analysts and regulators have
13 concluded that current market conditions have affected the results of the ROE estimation
14 models. As a result, it is important to consider the effect of these conditions on the ROE
15 estimation models when determining the appropriate range and recommended ROE for a
16 future period. If investors do not expect current market conditions to be sustained in the
17 future, it is possible that the ROE estimation models will not provide an accurate estimate
18 of investors' required return during that test year. Therefore, it is very important to
19 consider projected market data to estimate the return for that forward-looking period.

20 **Q. What factors are affecting the cost of equity for regulated utilities in the current and**
21 **prospective capital markets?**

22 A. The cost of equity for regulated utility companies is being affected by several factors in
23 the current and prospective capital markets, including: (1) changes in monetary policy,

1 (2) currently high inflation continuing into 2022, (3) increasing interest rates, and (4)
2 volatile market conditions. These factors affect the assumptions used in the ROE
3 estimation models. In this section, I discuss current and prospective capital market
4 conditions and how they affect the models used to estimate the cost of equity for
5 regulated utilities.

6 **Q. What effect do current and prospective market conditions have on the cost of equity**
7 **for the Companies?**

8 A. As is discussed in more detail in the remainder of this section, the combination of
9 persistently high inflation, the Federal Reserve's changes in monetary policy, and the
10 dramatic shifts in market conditions resulting from political influences all contribute to an
11 expectation of increased market risk and an increase in the cost of the investor-required
12 return on equity. It is essential that these factors be considered in setting a forward-
13 looking cost of equity. Inflation is currently at its highest level seen in approximately 40
14 years. Interest rates, which have increased significantly from the pandemic-related lows
15 of 2020 are expected to continue to increase in direct response to the Federal Reserve's
16 use of monetary policy. As discussed later herein, since there is a strong correlation
17 between interest rates and authorized utility ROEs, it is reasonable to expect that
18 investors' cost of equity is increasing. Because the cost of equity in this proceeding is
19 being estimated for the period that the Companies' rates will be in effect, and because
20 utility cost of equity is expected to increase over the near term for utilities, ROE
21 estimates based in whole or in part on current market conditions will understate the ROE
22 during the future period that the Companies' rates will be in effect.

1 **The Effect of Monetary Policy on Market Dynamics**

2 **Q. Please summarize the monetary policy actions taken by the Federal Reserve in**
3 **response to the economic effects of the COVID-19 pandemic.**

4 A. In response to the COVID-19 pandemic, the Federal Reserve:

- 5 • decreased the Federal Funds rate twice in March 2020, resulting in a target range
6 of 0.00 percent to 0.25 percent.
- 7 • increased its holdings of both Treasury and mortgaged-back securities.
- 8 • started expansive programs to support credit to large employers: the Primary
9 Market Corporate Credit Facility to provide liquidity for new issuances of
10 corporate bonds; and the Secondary Market Corporate Credit Facility to provide
11 liquidity for outstanding corporate debt issuances; and
- 12 • supported the flow of credit to consumers and businesses through the Term Asset-
13 Backed Securities Loan Facility.

14 In addition, Congress passed the Coronavirus Aid, Relief, and Economic Security Act
15 in March 2020, the Consolidated Appropriations Act, 2021 in December 2020 and the
16 American Rescue Plan Act in March 2021, which included \$2.2. trillion, \$900 billion and
17 \$1.9 trillion, respectively, in fiscal stimulus aimed at mitigating the economic effects of
18 COVID-19. These expansive monetary and fiscal programs mitigated the economic
19 effects of the COVID-19 pandemic and provided additional support for the economy to
20 recover from the COVID-19 recession.

21 **Q. How did the accommodative monetary and fiscal policy affect the U.S. economy?**

22 A. The expansive monetary and fiscal policy programs resulted in a strong economic
23 recovery in 2021 from the COVID-19 induced recessionary period in 2020. In fact,
24 according to the Bureau of Economic Analysis, real GDP grew by 5.7 percent in 2021

1 driven primarily by a 7.9 percent increase in personal consumption expenditures.¹⁰
2 Moreover, the unemployment rate decreased from a high of 14.7 percent in April 2020 to
3 3.9 percent as of December 2021.¹¹ Finally, as I will discuss in more detail below, the
4 economic recovery has also included a substantial increase in inflation with the year-
5 over-year (“YOY”) change in the Consumer Price Index (“CPI”) at 7.91 percent in
6 February 2022. The strong economic recovery along with the increase in inflation has
7 resulted in the Federal Reserve normalizing monetary policy and removing the
8 accommodative policy programs that it used to mitigate the effect of COVID-19.

9 **Q. Is the Federal Reserve currently normalizing monetary policy?**

10 A. Yes. In response to the significant increase in inflation, the Federal Reserve is currently
11 pursuing an aggressive normalization of monetary policy. As of the March 16, 2022
12 meeting, the Federal Reserve:

- 13 • Completed its taper of Treasury bond and mortgage-backed securities
14 purchases;¹²
- 15 • Increased the target federal funds rate from 0.00 – 0.25 percent to 0.25 – 0.50
16 percent¹³ and has forecasted an additional six rate increases in 2022 and four rate
17 increases in 2023 which resulted a median forecast of the federal funds rate of 1.9
18 percent and 2.8 percent, respectively;¹⁴ and
- 19 • Announced plans to reduce the size of its balance sheet at an upcoming meeting in
20 2020 which Chairman Powell noted could start as soon as the FOMC’s next
21 meeting in May¹⁵ and would be the equivalent of another rate increase.¹⁶

¹⁰ Bureau of Economic Analysis, News Release, February 24, 2022, at 8.

¹¹ Bureau of Labor Statistics.

¹² Federal Reserve Bank of New York, <https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/treasury-securities/treasury-securities-operational-details#monthly-details>.

¹³ Federal Reserve, Press Release, (Mar. 16, 2022).

¹⁴ Federal Reserve, Summary of Economic Projections, March 16, 2022, at 2.

¹⁵ Federal Reserve, Transcript of Chairman Powell’s Press Conference, March 16, 2022, at 18.

¹⁶ Federal Reserve, Transcript of Chairman Powell’s Press Conference, March 16, 2022, at 10.

1 Moreover, it is also important to note that while the FOMC decided on a 25 basis point
2 increase at the March 16, 2022 meeting, many participants noted that 50 basis point
3 increases may be appropriate in the future:

4 With inflation well above the Committee’s objective, inflationary risks to
5 the upside, and the federal funds rate well below participants’ estimates of
6 its longer-run level – they would have preferred a 50 basis point increase
7 in the target range for the federal funds rate at this meeting. A number of
8 these participants indicated, however, that in light of greater near-term
9 uncertainty associated with Russia’s invasion of Ukraine, they judged a 25
10 basis point increase would be appropriate at this meeting. Many
11 participants noted that one or more 50 basis point increases in the target
12 range could be appropriate at future meetings, particularly if inflation
13 pressures remained elevated or intensified.¹⁷

14 Finally, on April 6, 2022, the minutes to the March 16, 2022 meeting were released,
15 providing more specific details regarding the FOMC’s plans to reduce its balance sheet.
16 The minutes indicated that, “all participants agreed that elevated inflation and tight labor
17 market conditions warranted commencement of balance sheet runoff at a coming
18 meeting, with a faster pace of decline in securities holdings than over the 2017–19
19 period.”¹⁸ Those meeting minutes also indicated that members generally agreed that
20 monthly caps for reducing the size of the balance sheet of approximately \$60 billion for
21 Treasury securities and \$35 billion for mortgage-backed securities would likely be
22 appropriate.

23 **Q. What was the market response to the FOMC meeting?**

24 A. The market expects that interest rates will increase to address inflation. The CME Group
25 calculates investors’ views regarding the probability of the target federal funds rate range
26 at upcoming Federal Reserve meetings based on federal funds rate futures contracts.

¹⁷ FOMC March 15-16 Meeting Minutes at 10.

¹⁸ Minutes of the Federal Open Market Committee, March 15-16, 2022, at 4.

1 Figure 3 contains investors' expectations regarding the level of the federal funds rate at
2 each of the next eleven meetings as of April 4, 2022. As shown in Figure 3, investors
3 expect the Federal Reserve to increase the federal funds rate at a faster pace than what
4 was indicated at the Federal Reserve's March 16, 2022 meeting. According to the CME
5 Group, there is a 74.7 percent probability¹⁹ that the target federal funds rate range is 2.50
6 percent to 2.75 percent as of December 2022, which is greater than the Federal Reserve's
7 median forecast of 1.90 percent. In particular:

- 8 (1) Citigroup, Inc. is now projecting 50 basis point increases at the next four FOMC
9 meetings followed by 25 basis point increases in October and December, reaching
10 3.50 to 3.75 percent.
- 11 (2) Bank of America Corp. is projecting a 25 basis point increase in May, followed
12 by two 50 basis point increases, and then a 25 basis point increase at each
13 subsequent meeting through May 2023, reaching a range of 3.00 to 3.25 percent.
- 14 (3) Goldman Sachs Group Inc. is projecting 50 basis point increases at the May and
15 June FOMC meetings with a 25 basis point increase at the four remaining
16 meetings in 2022.²⁰

17 Thus, investors expect that the Federal Reserve will pursue more aggressive monetary
18 policy than indicated to combat persistent high levels of inflation.

¹⁹ The probability of a rate hike is calculated by adding the probabilities of all target rate levels above the current target rate.

²⁰ Lanman, Scott, "Wall Street Lifts Fed Forecasts; Citi See Four Half-Point Hikes," Bloomberg, March 25, 2022.

Figure 3: Investor Expectation of Future Federal Funds Rate Increases²¹

MEETING DATE	MEETING PROBABILITIES															
	50-75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-350	350-375	375-400	400-425	425-450
5/4/2022	25.6%	74.4%	0.0%	0.0%	0.0%											
6/15/2022	0.0%	0.0%	19.8%	63.2%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
7/27/2022	0.0%	0.0%	0.0%	8.0%	37.3%	44.6%	10.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
9/21/2022	0.0%	0.0%	0.0%	0.0%	5.9%	29.6%	42.7%	19.1%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11/2/2022	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	28.3%	42.0%	20.4%	3.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
12/14/2022	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.4%	27.7%	41.6%	21.0%	4.0%	0.2%	0.0%	0.0%	0.0%	0.0%
2/1/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	12.1%	31.9%	35.4%	15.9%	2.9%	0.2%	0.0%	0.0%	0.0%
3/15/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	2.4%	13.5%	32.2%	34.1%	15.0%	2.7%	0.2%	0.0%	0.0%
5/3/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.3%	8.1%	23.2%	33.2%	24.2%	8.6%	1.4%	0.1%	0.0%
6/14/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	5.3%	16.9%	29.0%	27.9%	15.1%	4.4%	0.6%	0.0%
7/26/2023	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	4.3%	14.3%	26.3%	28.1%	17.9%	6.7%	1.4%	0.2%

Q. Has the Federal Reserve provided support for investors’ expectations regarding the federal funds rate since the March 2022 meeting?

A. Yes. Specifically, on March 21, 2022 in prepared remarks before the National Association for Business Economics, Federal Reserve Chairman Powell noted:

“[w]e will take the necessary steps to ensure a return to price stability. . . . In particular, if we conclude that it is appropriate to move more aggressively by raising the federal funds rate by more than 25 basis points at a meeting or meetings, we will do so. And if we determine that we need to tighten beyond common measures of neutral and into a more restrictive stance, we will do that as well.”²²

This position has also been supported by the Federal Reserve Presidents and members of the Board of Governors. Specifically, Board of Governors member Lael Brainard recently stated that the Federal Reserve could not only start reducing its balance sheet as early as May, but would be doing so “at a rapid pace,” and that interest rate hikes could

²¹ CME Group; FedWatch tool as of March 21, 2022.

²² Cox, Jeff, “Powell says ‘inflation is much too high’ and the Fed will take ‘necessary steps’ to address,” CNBC, March 21, 2022. <https://www.cnbc.com/2022/03/21/powell-says-inflation-is-much-too-high-and-the-fed-will-take-necessary-steps-to-address.html>.

1 be at a more aggressive pace than the typical increments of 25 basis points.²³ Ms.
2 Brainard indicated that “inflation is much too high and subject to upside risks,” and the
3 Federal Reserve needs to act “quickly and aggressively to drive down inflation.”²⁴
4 Additionally, in an interview with Bloomberg, the San Francisco Federal Reserve
5 President Mary Daly noted that, “I have everything on the table right now,” further
6 indicating that, “the data will tell us whether 50 basis points or 25 basis points and the
7 balance sheet is the right recipe.”²⁵ Finally, the Philadelphia Federal Reserve President
8 Patrick Harker said that while he favors 25 basis point increases, if there is no
9 improvement in the inflation data, he was “open to sending a strong signal with a 50-
10 basis point increase at the next meeting.”²⁶

11 **Inflationary Expectations in Current and Projected Market Conditions**

12 **Q. Is the increase in inflation significant?**

13 A. Yes. As shown in Figure 4, the YOY change in the Consumer Price Index (“CPI”)
14 published by the Bureau of Labor statistics has increased steadily over the past year rising
15 from 1.37 percent in January 2021 to 7.91 percent in February 2022. The 7.91 percent
16 YOY in the CPI in February 2022 is the largest 12-month increase since 1982 and
17 significantly greater than any level seen since January 2008.

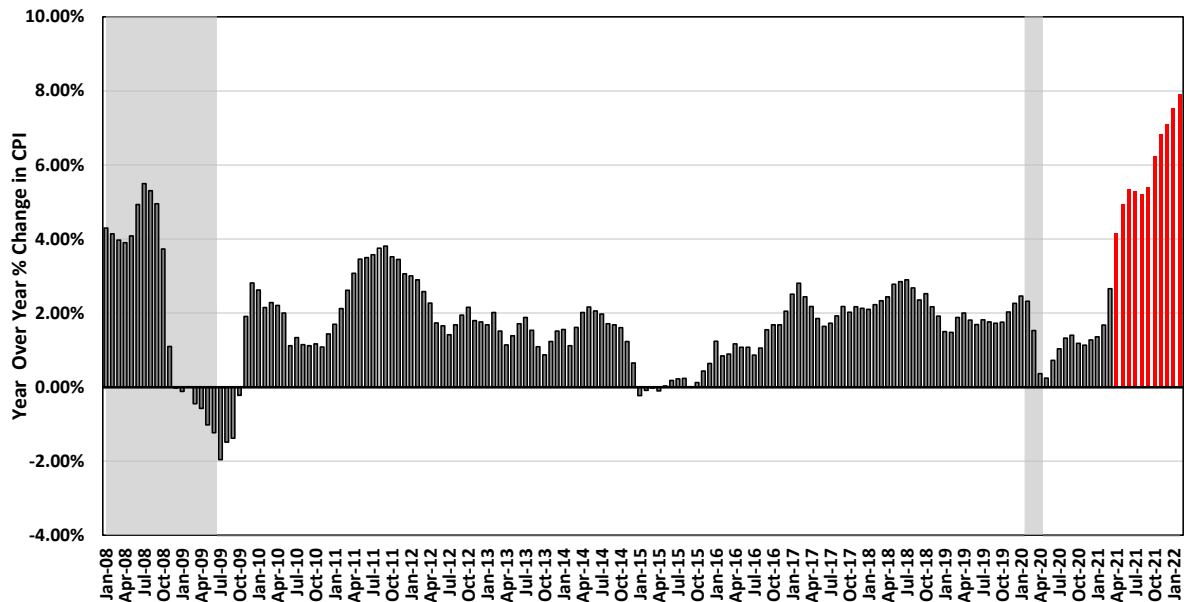
²³ See, e.g., Cox, Jeff, “Fed’s Brainard see balance sheet reduction soon and ‘at a rapid pace,’” CNBC, April 5, 2022.

²⁴ *Id.*

²⁵ MarketWatch, “Fed’s Daly says ‘everything on table’ in May, including 50 basis point hike and shrinking balance sheet,” March 23, 2022.

²⁶ Reuters, “Fed’s Harker expects 25- basis-point rate hikes, but open to 50 basis points”, March 29, 2022.

Figure 4: Consumer Price Index, YOY Percent Change – January 2008 – February 2022²⁷



Q. What are the expectations for inflation over the near-term?

A. In prepared remarks to the National Association for Business Economics, Chairman Powell noted that inflation was “much too high” and that the Federal Reserve “widely underestimated” how long increased inflation would last and as a result, stated that the Federal Reserve is prepared to “more aggressively” normalize monetary policy to achieve price stability.²⁸ Therefore, investors expect inflation to remain elevated over the near-term. One measure of investors’ expectations regarding inflation is the breakeven inflation rate calculated as the spread between the yield on a Treasury bond and the yield on a Treasury Inflation-Protected bond, since a Treasury Inflation-Protected bond would account for the effect of inflation. The maturity of the bond selected would then reflect investors’ views of inflation during the holding period of the bond. For example, the 10-

²⁷ Bureau of Labor Statistics, shaded area indicates a recession.

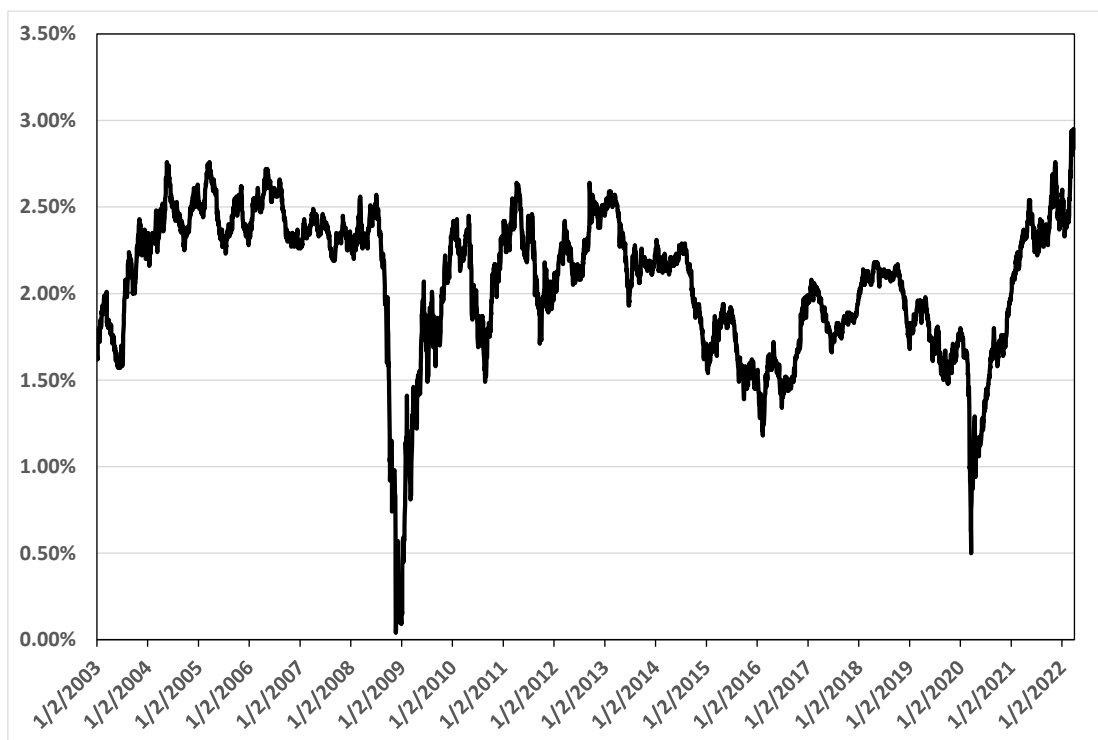
²⁸ Cox, Jeff, “Powell says ‘inflation is much too high’ and the Fed will take ‘necessary steps’ to address,” CNBC, March 21, 2022.

1 year breakeven inflation rate calculated as the spread between the 10-year Treasury bond
2 yield and the 10-year Treasury Inflation-Protected bond yield would reflect investors'
3 expectations of inflation over the next 10 years. As shown in Figure 5 below, the 10-year
4 breakeven inflation rate is currently greater than any level seen since January 2003.
5 Furthermore, the 10-year breakeven inflation rate as of March 18, 2020 was 2.86 percent
6 indicating that investors expect inflation will remain well above the Federal Reserve's 2
7 percent target over the next 10 years. There are many factors as to why inflation is
8 expected to remain elevated, Kiplinger recently noted a few factors including supply
9 shortages due to COVID-19 and Russia's war in Ukraine which led them to forecast an
10 inflation rate of 6.5 percent for 2022:

11 The surge in gasoline prices this month will boost March inflation to near
12 10% when the figures are released next month. The inflation rate will
13 likely remain high for the rest of the year, ending at 6.5% or so in
14 December. Russia's war in Ukraine will keep gasoline prices elevated for
15 much of the year. Even if the war ends, a Western embargo on Russian
16 energy will likely continue for quite a while. Food prices are also likely to
17 see a jump in next month's report, as wheat prices have surged 35%, given
18 that Ukraine is a major producer. Plus, there are expectations of continued
19 upward price pressures on rent, housing costs, and prices of many
20 services, as the pandemic eases and demand rebounds.²⁹

²⁹ Payne, David, "Inflation Will Spike Close to 10%," Kiplinger, March 10, 2022.

Figure 5: 10-year Breakeven Inflation Rate – January 2003 – March 2022³⁰



The Effect of Inflation on Interest Rates and the Investor-Required Return

Q. What effect will inflation have on long-term interest rates?

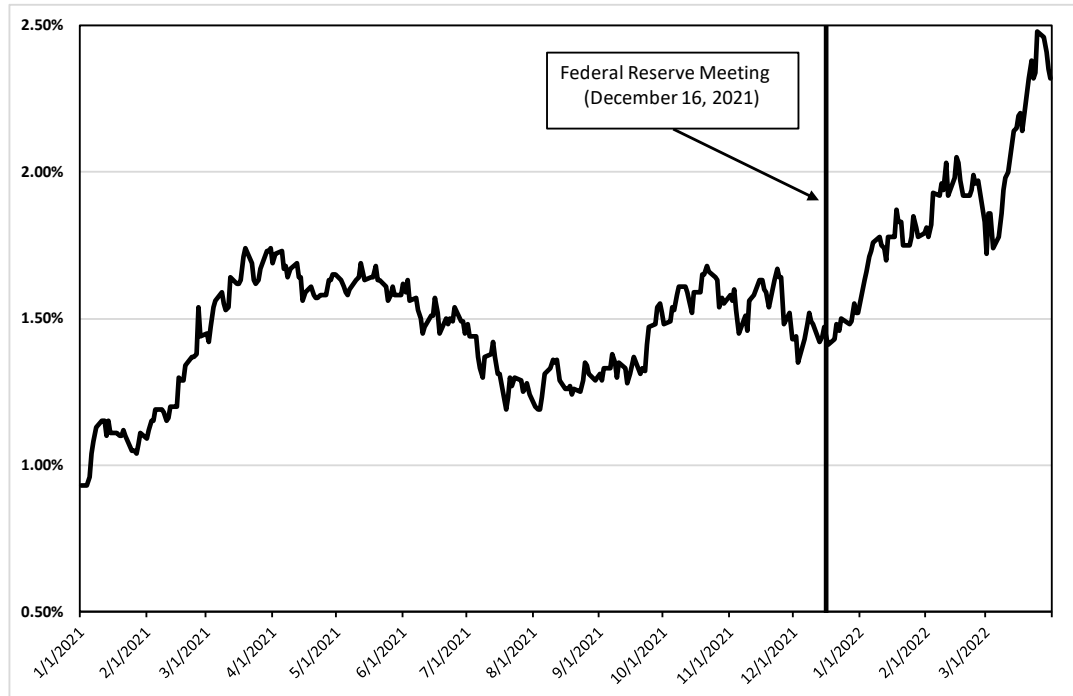
A. Inflation and the Federal Reserve's normalization of monetary policy will likely result in increases in long-term interest rates. Specifically, inflation reduces the purchasing power of the future interest payments an investor expects to receive over the duration of the bond. This risk increases the longer the duration of the bond. As a result, if investors expect increased levels of inflation, they will require higher yields to compensate for the increased risk of inflation, which means interest rates will increase.

Q. Have the yields on long-term government bonds increased in response to inflation and the Federal Reserve's normalization of monetary policy?

³⁰ Federal Reserve Bank of St. Louis, 10-Year Breakeven Inflation Rate [T10YIE], retrieved from FRED, Federal Reserve Bank of St. Louis.

1 A. Yes. As shown in Figure 6, since the Federal Reserve’s December 2021 meeting, as the
2 process of normalizing monetary policy has accelerated to respond to inflation, the yield
3 on the 10-year Treasury bond has increased over 90 basis points from 1.47 percent on
4 December 15, 2021 to 2.38 percent on April 1, 2022. The increase is due to the Federal
5 Reserve’s announcements at the December 2021, January 2022 and March 2022 meetings
6 and the increased levels of inflation that are now expected to persist much longer than the
7 Federal Reserve and investors had originally projected.

8 **Figure 6: 10-Year Treasury Bond Yield – January 2021 – March 2022³¹**



9
10 **Q. What have equity analysts said about long-term government bond yields?**

11 A. Several equity analysts have noted that they expect economic conditions to continue to
12 improve and thus the yields on long-term government bonds to continue to increase
13 through the end of 2022. As shown in Figure 7, according to various equity analysts, the

³¹ S&P Capital IQ Pro.

yield on the 10-year Treasury Bond is expected to range from 2.70 percent to 2.80 percent in 2022, and the current 30-day average yield on the 10-year Treasury Bond as of March 31, 2022 is already 2.08 percent and was trading over 2.70 percent as of April 8, 2022.

Figure 7: Equity Analysts' Forecast of the 10-year Treasury Yield v. Current 30-Day Average Yield

	Actual
30-Day Average as of March 31, 2022	2.08%
	2022 Forecast
Credit Suisse ³²	2.70%
Goldman Sachs ³³	2.70%
Blue Chip Financial Forecasts (Consensus Estimate) ³⁴	2.80%
BMO Economics ³⁵	2.70%

Q. Have you considered any additional indicators that may imply long-term interest rates are expected to increase?

A. Yes, I have. I considered the net position of commercials (*i.e.*, banks) in U.S. Treasury Bond futures contracts as reported in the Commitment of Traders (“COT”) Report produced by the Commodity Futures Trading Commission (“CFTC”). A net position is defined as the total number of long positions in a futures contract minus the total number of short positions in a futures contract. A long position means that an investor agrees to purchase an asset in the future at a specified price today and therefore profits if the price of the underlying asset increases. Conversely, short position is when an investor agrees to sell an asset at a time in the future at a specified price today and profits if the price of

³² Reuters, “U.S. 10-year yield to hit 2.7% this year - Credit Suisse,” February 16, 2022.

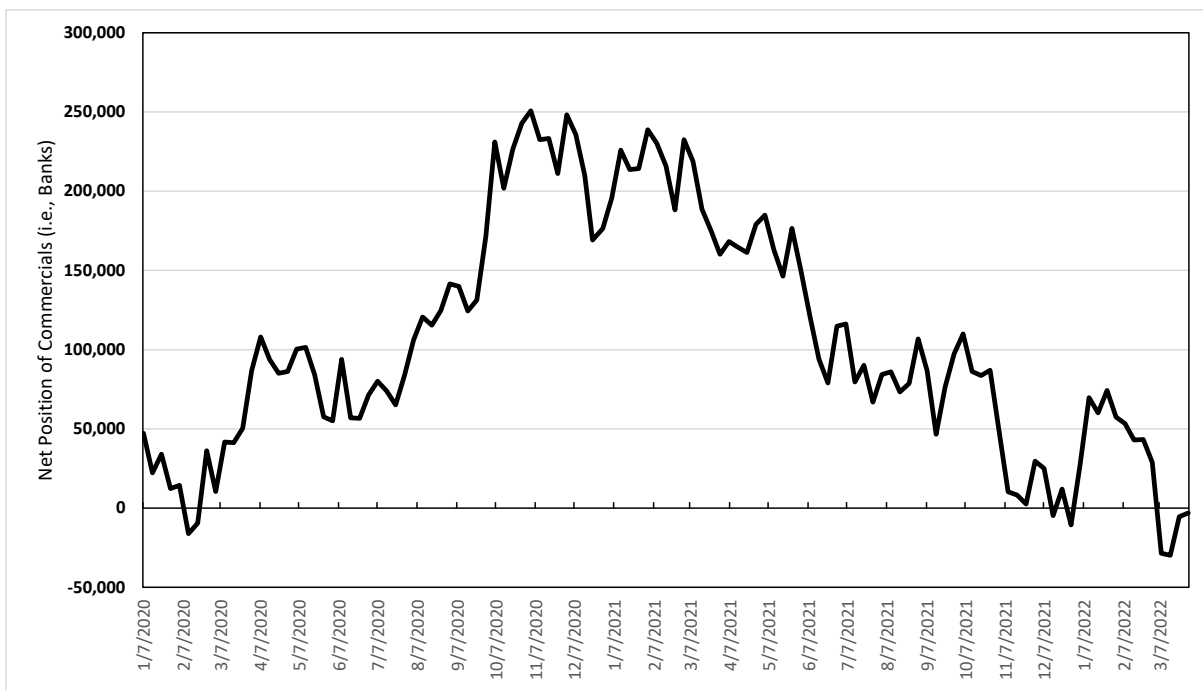
³³ Worrachate, Anchalee. “Goldman Sees Higher U.S. Treasury Yields, Curve Inversion.” Bloomberg[[.com]], March 25, 2022.

³⁴ Blue Chip Financial Forecasts, Vol. 41, No. 4, April 1, 2022, at 2.

³⁵ BMO Economics, “North American Outlook: Out of the Pandemic and Into the Fire,” March 31, 2022.

the asset declines. Therefore, if banks are increasing the number of short positions and thus have a declining net position, the banks are assuming that the price of the asset will decline. As shown in Figure 8, the net position of banks in U.S. Treasury Bonds has been decreasing since the end of 2020. Therefore, banks are expecting a decrease in the price of long-term government bonds and an increase in the yields over the near term because yields are inversely related to price.

Figure 8: Commitment of Traders Report – Net Position of Banks in U.S. Treasury Bond Futures Contracts³⁶



Conclusion

Q. What are your conclusions regarding the effect of current market conditions on the cost of equity for the Companies?

A. Over the near-term, investors expect long-term interest rates to increase in response to continued elevated levels of inflation and the Federal Reserve's normalization of

³⁶ Commitment of Traders Report, as of March 29, 2022.

1 monetary policy. Because interest rates and utility authorized ROEs are strongly
2 correlated, it is reasonable to expect that investors' required cost of equity will increase
3 during the period over which the Companies' rates will be in effect. This change in
4 market conditions also supports the use of other ROE estimation models such as the
5 CAPM and the ECAPM, which may better reflect expected market conditions.

6 **V. PROXY GROUP SELECTION**

7 **Q. Have you developed a proxy group for estimating the ROE for the Companies in**
8 **this proceeding?**

9 A. Yes. In this proceeding, I am estimating the cost of equity for the Companies, which are
10 rate-regulated subsidiaries of WEC, and not publicly-traded. Since the ROE is a market-
11 based concept, and the Companies' operations do not make up the entirety of a publicly-
12 traded entity, it is necessary to establish a group of companies that is both publicly-traded
13 and comparable to the Companies in certain fundamental business and financial respects
14 to serve as its "proxy" for purposes of the ROE estimation process. Even if the
15 Companies were publicly-traded entities, it is possible that transitory events could bias
16 their respective market values over a given period. A significant benefit of using a proxy
17 group is that it moderates the effects of unusual events that may be associated with any
18 one company. The proxy companies used in my analyses all possess a set of operating
19 and financial risk characteristics that are substantially comparable to WEPCO and WG,
20 and, therefore, provide a reasonable basis for deriving the appropriate ROE.

21 **Q. Please provide a brief profile of WEPCO.**

22 A. WEPCO provides electric generation, transmission, and distribution services to
23 approximately 1,149,000 electric customers located in eastern Wisconsin and 498,000

1 natural gas customers located in southeast Wisconsin.³⁷ WEPCO has a peak electric
2 demand of approximately 5,200 MW, serving customers with approximately 19,700
3 miles of overhead distribution line and 25,700 miles of buried cable.³⁸ WEPCO provides
4 gas service through approximately 64 million feet of distribution main and had a total
5 natural gas sendout for 2020 of approximately 89 million dth.³⁹ WEPCO's current long-
6 term issuer ratings are: (1) A2 (outlook Stable) from Moody's Investor Services
7 ("Moody's"); and (2) A- (outlook stable) from Standard and Poor's ("S&P").⁴⁰

8 **Q. Please provide a brief profile of WG.**

9 A. WG provides natural gas distribution service to approximately 647,000 natural gas
10 customers throughout Wisconsin.⁴¹ WG provides service through approximately 73
11 million feet of distribution main and had a total natural gas sendout for 2020 of
12 approximately 198 million dth.⁴² WG's current long-term issuer ratings are as follows:
13 (1) A3 (outlook negative) from Moody's; and (2) A (outlook stable) from S&P.⁴³

14 **Q. How did you select the companies included in your proxy group for WEPCO?**

15 A. For WEPCO, I established a proxy group consisting of publicly-traded companies with
16 both electric and natural gas utility operating subsidiaries. To derive the "WEPCO Proxy
17 Group," I began with the group of 46 companies that Value Line classifies as Electric

³⁷ PSCW, Wisconsin Electric Power Company, Annual Report for Year Ended December 31, 2020, June 1, 2021, Schedule E-10, p. 10 and Schedule G-26, p. 5.

³⁸ PSCW, Wisconsin Electric Power Company, Annual Report for Year Ended December 31, 2020, June 1, 2021, Schedule E-23, p. 1 and Schedule E-27, p. 1.

³⁹ PSCW, Wisconsin Electric Power Company, Annual Report for Year Ended December 31, 2020, June 1, 2021, Schedule G-20, p. 1 and Schedule G-24, p. 1.

⁴⁰ Moody's Investor Service, Credit Opinion, December 23, 2021 (also provided as Ex.-WEPCO/WG-Shipman-3); S&P Global Ratings, Ratings Direct, May 26, 2021 (also provided as Ex.-WEPCO/WG-Shipman-4).

⁴¹ PSCW, Wisconsin Gas Company, Annual Report for Year Ended December 31, 2020, June 1, 2021, Schedule G-26, p. 17.

⁴² PSCW, Wisconsin Gas, Annual Report for Year Ended December 31, 2020, June 1, 2021, Schedule G-20, p. 1 and Schedule G-24, p. 1.

⁴³ Moody's Investor Service, Credit Opinion, December 23, 2021 (also provided as Ex.-WEPCO/WG-Shipman-5); S&P Global Ratings, Ratings Direct, May 6, 2021 (also provided as Ex.-WEPCO/WG-Shipman-8).

1 Utilities and Natural Gas Distribution Utilities and applied the following screening
2 criteria to select companies that:

- 3 • pay consistent quarterly cash dividends, because companies that do not cannot be
4 analyzed using the Constant Growth DCF model;
- 5 • have investment grade long-term issuer ratings from S&P and/or Moody's;
- 6 • are covered by at least two utility industry analysts;
- 7 • have positive long-term earnings growth forecasts from at least two utility
8 industry equity analysts;
- 9 • derive more than 60 percent of their total operating income from regulated
10 operations; and
- 11 • were not parties to a merger or transformative transaction during the analytical
12 periods relied on.

13 **Q. How did you select the companies included in your proxy group for WG?**

14 A. For WG, I began with the group of 10 publicly-traded companies that Value Line
15 classifies as Natural Gas Distribution Utilities and derived the "WG Proxy Group" by
16 applying the following screening criteria to select companies that:

- 17 • pay consistent quarterly cash dividends, because companies that do not cannot be
18 analyzed using the Constant Growth DCF model;
- 19 • have investment grade long-term issuer ratings from S&P and/or Moody's;
- 20 • are covered by at least two utility industry analysts;
- 21 • have positive long-term earnings growth forecasts from at least two utility
22 industry equity analysts;
- 23 • derive more than 60 percent of their total operating income from regulated
24 operations;
- 25 • derive more than 60 percent of regulated operating income from gas distribution
26 operations; and

- were not parties to a merger or transformative transaction during the analytical periods relied on.

Q. Did you include WEC in either of the proxy groups?

A. No. In order to avoid the circular logic that otherwise would occur, it is my practice to exclude the subject company, or its parent holding company, from the proxy group.

Q. What is the composition of the WEPCO Proxy Group?

A. The WEPCO Proxy Group consists of the companies shown in Figure 9.

Figure 9: WEPCO Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Spire, Inc.	SR
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avista Corporation	AVA
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Eversource Energy	ES
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
Otter Tail Corporation	OTTR
Portland General Electric Company	POR
Southern Company	SO
Xcel Energy Inc.	XEL

Q. What is the composition of the WG Proxy Group?

A. The WG Proxy Group consists of the companies shown in Figure 10. The screening criteria and the resulting proxy group are also shown in Ex.-WEPCO/WG-Bulkley-3(b).

Figure 10: WG Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas Inc.	OGS
Spire, Inc.	SR

Q. Do your screening criteria result in proxy groups that have comparable risk profiles to WEPCO and WG?

A. Yes, they do. The overall purpose of developing a set of screening criteria is to select a proxy group of companies that align with the financial and operational characteristics of WEPCO and WG and that investors would view as comparable to the Companies. I developed the screens and thresholds for each screen based on judgment with the intention of balancing the need to maintain a proxy group that is of sufficient size with establishing a proxy group of companies that are comparable in overall business and financial risk to WEPCO and WG.

VI. COST OF EQUITY ESTIMATION

Q. Please explain the rate of return in the context of a regulated utility.

A. The regulatory construct requires that the regulatory agency, acting as a substitute for the competitive market, establish a rate of return for the utility that is commensurate with the rate of return expected in the market for investments of similar risk. There can be adjustments to the ROE to reflect specific performance (*e.g.*, positive adjustments recognizing strong management performance, cost savings and other important operational metrics, or negative adjustments reflecting poor performance in similar metrics). Absent any adjustments for these types of performance measures, the base

1 ROE is intended to reflect the return that investors require in order to invest in utility
2 assets rather than investing in enterprises of comparable risk in the industry or
3 competitive market.

4 The overall rate of return for a regulated utility includes both the cost of debt and
5 the cost of equity and is based on its weighted average cost of capital, whereby the costs
6 of the individual sources of capital are weighted by their proportion in the capital
7 structure. The appropriate cost of debt can be directly observed because utilities issue
8 bonds in the market and investors determine the required return on those bonds to take on
9 the risks associated with debt repayment. In contrast, the cost of equity is less observable
10 and must reflect that the risk to equity investors is greater than that of debt investors
11 because debt investors get paid first if a business dissolves. The cost of equity is market-
12 based and, therefore, must be estimated based on observable market data. Accordingly,
13 the returns for comparable publicly-traded companies can be used to determine the
14 appropriate cost of equity for a regulated utility operating company.

15 **Q. How is the required ROE determined?**

16 A. The required ROE is estimated by using multiple analytical techniques that rely on
17 market data to quantify investors' return requirements, adjusted for certain incremental
18 costs and risks. Quantitative models produce a range of reasonable results from which
19 the market-required ROE is selected. That selection must be based on a comprehensive
20 review of relevant data and information, but it does not necessarily lend itself to a strict
21 mathematical solution. The key consideration in determining the cost of equity is to
22 ensure that the methodologies employed reasonably reflect investors' views of the

1 financial markets in general and of the subject company (in the context of the proxy
2 group) in particular.

3 **Q. What methods did you use to determine the Companies' ROEs?**

4 A. I considered the results of the Constant Growth DCF model, the CAPM and ECAPM
5 analyses, and the BYRP methodology. I believe that a reasonable ROE estimate
6 considers alternative methodologies, observable market data, and the reasonableness of
7 their individual and collective results.

8 **Importance of Multiple Analytical Approaches**

9 **Q. Why is it important to use more than one analytical approach when estimating**
10 **ROEs?**

11 A. Because the cost of equity is not directly observable, it must be estimated based on both
12 quantitative and qualitative information. When faced with the task of estimating the cost
13 of equity, analysts and investors are inclined to gather and evaluate as much relevant data
14 as reasonably can be analyzed. As a practical matter, all the models available for
15 estimating the cost of equity are subject to limiting assumptions or other methodological
16 constraints. Consequently, many well-regarded finance texts recommend using multiple
17 approaches when estimating the cost of equity. For example, Copeland, Koller, and
18 Murrin⁴⁴ suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham
19 and Gapenski⁴⁵ recommend the CAPM, DCF, and BYRP approaches.

20 **Q. Is it important given the current market conditions to use more than one analytical**
21 **approach?**

⁴⁴ Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

⁴⁵ Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

1 A. Yes. The effect of the recent period of low interest rate environment can be seen in the
2 low dividend yields for electric and natural gas utilities, which in turn result in DCF cost
3 of equity estimates that understate the forward-looking cost of equity. Further, while
4 utility stocks had trended down with higher interest rates, as a result of the political
5 turmoil associated with the war in Ukraine, investors have recently returned to utility
6 stocks as a safe haven seeking to lower risk, resulting in lower dividend yields. This
7 means that current dividend yields for utilities reflected in the DCF are projected to
8 underestimate the cost of equity for the Companies going forward.

9 Lower interest rates have recently affected the CAPM in two ways: (1) the risk-
10 free rate is lower than expected going forward; and (2) because the market risk premium
11 is a function of interest rates (*i.e.*, it is the return on the broad stock market less the risk-
12 free interest rate), the market risk premium is higher than what it is expected going
13 forward. With interest rates and bond yields now rising, the expected cost of equity will
14 be higher than is suggested by the CAPM using historical average yields. Thus, using
15 projected Treasury bond yields in the CAPM results in estimates that better reflect
16 anticipated market conditions during the period that the Companies' rates will be in
17 effect.

18 During such a transitory period as this one, it is important to use multiple
19 analytical approaches to moderate the impact that the recent low interest rate environment
20 has had on the ROE estimates for the proxy group and, where possible, consider using
21 projected market data in the models to estimate the return for the forward-looking period
22 over which the rates being established will be in effect. Under these circumstances,
23 relying exclusively on historical and even current assumptions in these models, without

1 considering whether these assumptions are consistent with investors' future expectations,
2 will underestimate the cost of equity that investors would require over the period that the
3 rates in this case are to be in effect.

4 **Q. Have regulatory commissions recognized the importance of considering the results**
5 **of multiple models?**

6 A. Yes. Several regulatory commissions consider the results of multiple ROE estimation
7 methodologies such as the DCF, CAPM, and ECAPM in determining the authorized
8 ROE, including the Washington Utilities and Transportation Commission ("Washington
9 UTC"),⁴⁶ the Michigan Public Service Commission ("Michigan PSC"),⁴⁷ the Minnesota
10 Public Utilities Commission,⁴⁸ the Iowa Utilities Board,⁴⁹ and the New Jersey Board of
11 Public Utilities.⁵⁰

12 For example, the Washington UTC has repeatedly emphasized that it "places
13 value on each of the methodologies used to calculate the cost of equity and does not find
14 it appropriate to select a single method as being the most accurate or instructive."⁵¹ The
15 Washington UTC has also explained that "[f]inancial circumstances are constantly
16 shifting and changing, and we welcome a robust and diverse record of evidence based on
17 a variety of analytics and cost of capital methodologies."⁵² Additionally, in a 2018 DTE

⁴⁶ *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013); *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

⁴⁷ Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, September 13, 2018, at 45-47.

⁴⁸ Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27; Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, at 60-61.

⁴⁹ Iowa Utilities Board, Iowa-American Water Company, RPU-2016-0002, Final Decision and Order issued February 27, 2017, at 35.

⁵⁰ NJBPU Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, March 18, 2015, at 71.

⁵¹ *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013).

⁵² *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

Gas Company rate proceeding, the Michigan PSC considered the results of each of the models presented by the ROE witnesses, which included the DCF, CAPM, and ECAPM in the determination of the authorized ROE.⁵³ In the proceeding, the Michigan PSC also considered authorized ROEs in other states, increased volatility in capital markets and the company-specific business risks of DTE Gas.

Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where P_0 represents the current stock price, $D_1 \dots D_\infty$ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. What assumptions are required in the Constant Growth DCF model?

⁵³ Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, September 13, 2018, at 45-47.

1 A. The Constant Growth DCF model requires the following assumptions: (1) a constant
2 growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a price-to-
3 earnings (“P/E”) ratio; and (4) a discount rate greater than the expected growth rate. To
4 the extent any of these assumptions is violated, considered judgment and/or specific
5 adjustments should be applied to the results.

6 **Q. What market data did you use to calculate the dividend yield in your Constant**
7 **Growth DCF model?**

8 A. The dividend yield in my Constant Growth DCF model was based on the proxy
9 companies’ current annual dividend and average closing stock prices over the 30, 90, and
10 180 trading days as of February 28, 2022.

11 **Q. Why did you use three averaging periods for stock prices?**

12 A. I used an average of recent trading days to calculate the price term (P_0) in the DCF model
13 to ensure that the ROE was not skewed by anomalous events that may affect stock prices
14 on any given trading day. The averaging period should also be reasonably representative
15 of expected capital market conditions over the long term. Where current market
16 conditions cannot be expected to continue throughout the rate period, it is important to
17 recognize that current average prices in the Constant Growth DCF model are not
18 consistent with forward-looking market expectations. Therefore, the results of my
19 Constant Growth DCF model using historical data may underestimate the forward-
20 looking cost of equity. As a result, I placed more weight on the results of the Constant
21 Growth DCF model that use the mean growth rate and maximum growth rate.

22 **Q. Did you make any adjustment to the dividend yield to account for periodic growth**
23 **in dividends?**

1 A. Yes. Since utility companies tend to increase their quarterly dividends at different times
2 throughout the year, it is reasonable to assume that dividend increases will be evenly
3 distributed over calendar quarters. Given that assumption, it is reasonable to apply one-
4 half of the expected annual dividend growth rate for purposes of calculating the expected
5 dividend yield component of the DCF model. This adjustment ensures that the expected
6 first year dividend yield is, on average, representative of the coming twelve-month
7 period, and does not overstate the aggregated dividends to be paid during that time.

8 **Q. Why is it important to select appropriate measures of long-term growth in applying**
9 **the DCF model?**

10 A. In its constant growth form, the DCF model (*i.e.*, Equation [2]) assumes a single long-
11 term growth rate in perpetuity. In order to reduce the long-term growth rate to a single
12 measure, one must assume that the dividend payout ratio remains constant and that
13 earnings per share (“EPS”), dividends per share, and book value per share all grow at the
14 same constant rate. Over the long run, however, dividend growth can only be sustained
15 by earnings growth. Therefore, it is important to incorporate a variety of sources of long-
16 term earnings growth rates into the Constant Growth DCF model.

17 **Q. What sources of long-term growth rates did you rely on in your Constant Growth**
18 **DCF model?**

19 A. My Constant Growth DCF model incorporated three sources of long-term growth rates:
20 (1) consensus long-term earnings growth estimates from Zacks Investment Research; (2)
21 consensus long-term earnings growth estimates from Thomson First Call (provided by
22 Yahoo! Finance); and (3) long-term earnings growth estimates from Value Line
23 Investment Survey (“Value Line”).

1 **Q. How did you calculate a range of results for the Constant Growth DCF model?**

2 A. I calculated the low-end result for the Constant Growth DCF model using the lowest
3 projected earnings growth rate (*i.e.*, the lowest of Thomson First Call, Zacks, and Value
4 Line) for each of the proxy group companies. I calculated the high-end result by using
5 the highest projected earnings growth rate of the three sources for each proxy group
6 company. I calculated the mean results using the mean growth rate of the three sources
7 for each proxy group company.

8 **Q. What did you rely on as the measure of central tendency for purposes of your**
9 **analysis?**

10 A. Once the results for each proxy group company were calculated, I relied on the median of
11 the results as the measure of central tendency. The median as a measure of central
12 tendency reasonably excludes observations that may be considered outliers or anomalous.

13 **Q. What are the results of your Constant Growth DCF analyses?**

14 A. Figures 11 and 12 present the range of the results produced by my Constant Growth DCF
15 model for the WEPCO Proxy Group and WG Proxy Group, respectively.⁵⁴ As shown in
16 Figure 11, when relying on the mean growth rates, the median DCF results for the
17 WEPCO Proxy Group range from 9.56 percent to 9.60 percent, and when relying on the
18 maximum growth rates, the results range from 10.18 percent to 10.38 percent. As shown
19 in Figure 12, when relying on the mean growth rates, the median DCF results for the WG
20 Proxy Group range from 9.93 percent to 10.02 percent, and when relying on the
21 maximum growth rates, the results range from 10.17 percent to 10.27 percent. While I
22 also summarize the median DCF results relying on the minimum growth rates, I do not

⁵⁴ These details and results of the Constant Growth DCF analyses are reflected in Ex.-WEPCO/WG-Bulkley-4(a) and 4(b).

believe that these DCF results provide a reasonable spread over the expected yields on Treasury bonds to compensate investors for the incremental risk related to an equity investment.

Figure 11: DCF Results – WEPCO Proxy Group

	Min Gwth Rate	Mean Gwth Rate	Max Gwth Rate
30-Day Average	8.51%	9.56%	10.18%
90-Day Average	8.52%	9.60%	10.30%
180-Day Average	8.52%	9.60%	10.38%
Constant Growth Average	8.52%	9.59%	10.29%

Figure 12: DCF Results – WG Proxy Group

	Min Gwth Rate	Mean Gwth Rate	Max Gwth Rate
30-Day Average	8.42%	9.93%	10.17%
90-Day Average	8.47%	10.02%	10.27%
180-Day Average	8.42%	9.97%	10.22%
Constant Growth Average	8.44%	9.97%	10.22%

Q. What are your conclusions regarding the results of the DCF model?

A. As discussed previously, one primary assumption of the DCF models is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Because utility stocks are expected to underperform the broader market over the near term as interest rates increase, it is important to consider the results of the DCF model with caution. The results of the DCF model, which relies on historical stock prices, are below what they would be expected to be going forward during the period in which the rates for the Companies will be in effect. Therefore, while I have given weight to the results of my Constant Growth DCF model, my ROE recommendation also gives weight to the results of other ROE estimation models.

CAPM Analysis

Q. Please briefly describe the CAPM.

1 A. The CAPM is a risk premium approach that estimates the cost of equity for a given
2 security as a function of a risk-free return plus a risk premium to compensate investors
3 for the non-diversifiable or “systematic” risk of that security. This second component is
4 the product of the market risk premium and the beta coefficient, which measures the
5 relative riskiness of the security being evaluated.

6 The CAPM is defined by four components, each of which must theoretically be a
7 forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

9 Where:

10 K_e = the required market ROE;

11 β = beta coefficient of an individual security;

12 r_f = the risk-free ROR; and

13 r_m = the required return on the market as a whole.

14 In this specification, the term $(r_m - r_f)$ represents the market risk premium.
15 According to the theory underlying the CAPM, since unsystematic risk can be diversified
16 away, investors should only be concerned with systematic or non-diversifiable risk. Non-
17 diversifiable risk is measured by beta, which is defined as:

$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} \quad [4]$$

18 The variance of the market return (*i.e.*, Variance (r_m)) is a measure of the
19 uncertainty of the general market, and the covariance between the return on a specific
20 security and the general market (*i.e.*, Covariance (r_e, r_m)) reflects the extent to which the
21 return on that security will respond to a given change in the general market return. Thus,
22 beta represents the risk of the security relative to the general market.

23 **Q. What risk-free rate did you use in your CAPM analysis?**

1 A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day
2 average yield on 30-year U.S. Treasury bonds, which is 2.20 percent;⁵⁵ (2) the average
3 projected 30-year U.S. Treasury bond yield for the first quarter of 2022 through the first
4 quarter of 2023, which is 2.74 percent;⁵⁶ and (3) the average projected 30-year U.S.
5 Treasury bond yield for 2023 through 2027, which is 3.40 percent.⁵⁷

6 **Q. Would you place more weight on any of these scenarios?**

7 A. Yes. Based on current market conditions, I place more weight on both results of the
8 projected yields of the 30-year Treasury bonds. As discussed previously, the estimation
9 of the cost of equity in this case should be forward-looking because it is the return that
10 investors would receive over the future rate period. Therefore, the inputs and
11 assumptions used in the CAPM analysis should reflect the expectations of the market at
12 that time. While I have included the results of a CAPM analysis that relies on a current
13 30-day average risk-free rate, this analysis fails to take into consideration the effect of the
14 market's expectations for interest rate increases on the cost of equity.

15 **Q. What beta coefficients did you use in your CAPM analysis?**

16 A. As shown in Ex.-WEPCO/WG-Bulkley-4(a) and Ex.-WEPCO/WG-Bulkley-4(b), I used
17 the average beta coefficients for the proxy group companies as reported by Bloomberg
18 and Value Line. The beta coefficients reported by Bloomberg are based on ten years of
19 weekly returns relative to the S&P 500 Index. The beta coefficients reported by Value
20 Line are based on five years of weekly returns relative to the New York Stock Exchange
21 Composite Index. As shown in Ex.-WEPCO/WG-Bulkley-4(a) and Ex.-WEPCO/WG-

⁵⁵ Bloomberg Professional, as of February 28, 2021.

⁵⁶ Blue Chip Financial Forecasts, Vol. 41, No. 3, March 2, 2022, at 2.

⁵⁷ Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14.

1 Bulkley-4(b), I also considered an additional CAPM analysis that relies on the long-term
2 average utility beta coefficient for the companies in each proxy group, which is
3 calculated as an average of the beta coefficients reported by Value Line from 2016
4 through 2021.

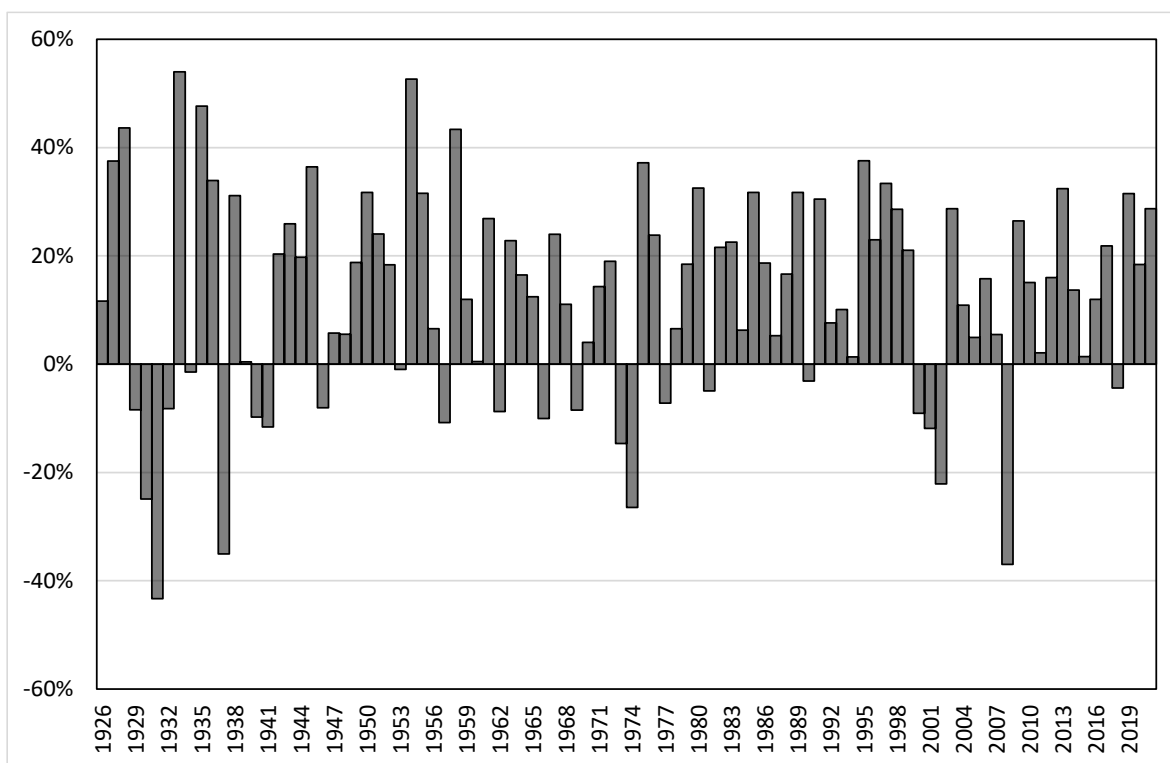
5 **Q. How did you estimate the market risk premium in the CAPM?**

6 A. I estimated the market risk premium as the difference between the implied expected
7 equity market return and the risk-free rate. The expected market return on the S&P 500
8 Index is calculated using the Constant Growth DCF model discussed earlier in my
9 testimony for the companies in the S&P 500 Index for which dividend yields and Value
10 Line long-term earnings projections are available. The implied market risk premium over
11 the risk-free rates (*i.e.*, the current, near-term projected and longer-term projected 30-year
12 U.S. Treasury bond yield) ranges from 10.65 percent to 11.86 percent.

13 **Q. How does the current expected market return compare to observed historical**
14 **returns?**

15 A. Given the range of annual equity returns that have been observed over the past century as
16 shown in Figure 13, a current expected return of 14.05 percent is not unreasonable. In 49
17 out of the past 95 years (or roughly 51 percent of observations), the realized equity return
18 was at least 14.05 percent.

Figure 13: Realized U.S. equity market returns (1926-2021)⁵⁸



Q. Did you consider another form of the CAPM in your analysis?

A. Yes. I also considered the results of an ECAPM analysis in estimating the cost of equity for WEPCO and WG.⁵⁹ The ECAPM calculates the product of the adjusted beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

⁵⁸ Depicts total annual returns on large company stocks, as reported in the 2022 Duff and Phelps SBBI Yearbook.

⁵⁹ See e.g., Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 189.

1 Where:

2 k_e = the required market ROE

3 β = adjusted beta coefficient of an individual security

4 r_f = the risk-free rate of return

5 r_m = the required return on the market as a whole

6 In essence, the ECAPM addresses the tendency of the “traditional” CAPM to
7 underestimate the cost of equity for companies with beta coefficients less than 1.00 such
8 as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted
9 betas reflected in the analysis, but rather recognizes the results of academic research
10 indicating that the risk-return relationship is different (in essence, flatter) than estimated
11 by the CAPM, and that the CAPM underestimates the “alpha,” or the constant return
12 term.⁶⁰

13 The ECAPM analysis relies on the same inputs as used in the CAPM (*i.e.*, the
14 current, near-term and longer-term yields on the 30-year Treasury bond as the risk-free
15 rate; the forward-looking market risk premium estimates; and the Bloomberg, Value Line
16 and long-term average beta coefficients).

17 **Q. What are the results of your CAPM and ECAPM analyses?**

18 A. Figures 14 and 15 present the range of the results produced by the CAPM and ECAPM
19 analyses for the WEPCO Proxy Group and WG Proxy Group, respectively.⁶¹ As shown,
20 the traditional CAPM analysis produces a range of returns from 10.70 percent to 12.99
21 percent for the WEPCO Proxy Group, and a range of 10.62 percent to 12.19 percent for
22 the WG Proxy Group. The ECAPM analysis results range from 11.54 percent to 13.26

⁶⁰ *Id.*, at 191.

⁶¹ These details and results of the CAPM and ECAPM analyses are reflected in Ex.-WEPCO/WG-Bulkley-4(a) through 6(b).

percent for the WEPCO Proxy Group and 11.48 percent to 12.66 percent for the WG Proxy Group.

Figure 14: CAPM and ECAPM Results – WEPCO Proxy Group

CAPM			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
Value Line Beta	12.87%	12.92%	12.99%
Bloomberg Beta	11.86%	11.96%	12.08%
Long-term Avg. Beta	10.70%	10.85%	11.04%
ECAPM			
Value Line Beta	13.17%	13.21%	13.26%
Bloomberg Beta	12.41%	12.48%	12.58%
Long-term Avg. Beta	11.54%	11.65%	11.79%

Figure 15: CAPM and ECAPM Results – WG Proxy Group

CAPM			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
Value Line Beta	11.98%	12.07%	12.19%
Bloomberg Beta	11.71%	11.81%	11.94%
Long-term Avg. Beta	10.62%	10.77%	10.96%
ECAPM			
Value Line Beta	12.50%	12.57%	12.66%
Bloomberg Beta	12.29%	12.37%	12.47%
Long-term Avg. Beta	11.48%	11.59%	11.74%

BYRP Analysis

Q. Please describe the BYRP approach.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as bondholders, who have a superior right to be repaid in the event of dissolution. That is, because returns to equity holders have greater

1 risk than returns to bondholders, equity investors must be compensated to bear that risk.
2 Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity
3 risk premium and the yield on a particular class of bonds. In my analysis, I used actual
4 authorized returns for electric and natural gas utility companies as the historical measure
5 of the cost of equity to determine the risk premium for WEPCO, and the actual
6 authorized returns for natural gas utility companies as the historical measure of the cost
7 of equity to determine the risk premium for WG.

8 **Q. Are there other considerations that should be addressed in conducting this analysis?**

9 A. Yes. It is important to recognize both academic literature and market evidence indicating
10 that the equity risk premium (as used in this approach) is inversely related to the level of
11 interest rates. That is, as interest rates increase, the equity risk premium decreases, and
12 vice versa. Consequently, it is important to develop an analysis that: (1) reflects the
13 inverse relationship between interest rates and the equity risk premium; and (2) relies on
14 recent and expected market conditions. Such an analysis can be developed based on a
15 regression of the risk premium as a function of U.S. Treasury bond yields. In my
16 analysis, I used actual authorized returns for electric and natural gas utility companies
17 (for WEPCO) and natural gas utilities (for WG) and corresponding long-term Treasury
18 yields as the historical measure of the cost of equity to determine the risk premium. If the
19 authorized ROEs serve as the measure of required equity returns and the yield on the
20 long-term U.S. Treasury bond is defined as the relevant measure of interest rates, the
21 equity risk premium simply would be the difference between those two points.⁶²

⁶² See, e.g., S. Keith Berry, Interest Rate Risk and Utility Risk Premia during 1982-93, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar

1 **Q. Is the BYRP analysis relevant to investors?**

2 A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those
3 awards as benchmarks for a reasonable level of equity returns for utilities of comparable
4 risk operating in other jurisdictions.⁶³ Since my BYRP analysis is based on authorized
5 ROEs for utility companies relative to corresponding Treasury yields, it provides relevant
6 information to assess the return expectations of investors.

7 **Q. Did you analyze the relationship between equity risk premia and interest rates?**

8 A. As shown in Figures 16 and 17, from 1992 through February 2022, there was a strong
9 negative relationship between risk premia and interest rates. To estimate that
10 relationship, I conducted a regression analysis using the following equation:

11
$$RP = a + b(T) \text{ [6]}$$

12 Where:

13 RP = Risk Premium (difference between authorized ROEs and the yield
14 on 30-year U.S. Treasury bonds)

15 a = intercept term

16 b = slope term

17 T = 30-year U.S. Treasury bond yield

18 Data regarding allowed ROEs were derived from electric and natural gas utility
19 rate cases from 1992 through February 2022 as reported by RRA for the WEPCO Proxy
20 Group, and from natural gas utility rates cases over the same time period for the WG

conclusions regarding the inverse relationship between risk premia and interest rates. *See also* Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return, Financial Management, Spring 1986, at 66.

⁶³ *See, e.g.*, Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017 for a discussion on how Moody's considers the overall regulatory framework in establishing credit ratings. *See also* Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018.

Proxy Group.⁶⁴ The equation's coefficients were statistically significant at the 99.00 percent level.

Figure 16: Risk Premium – US Electric and Natural Gas Utilities

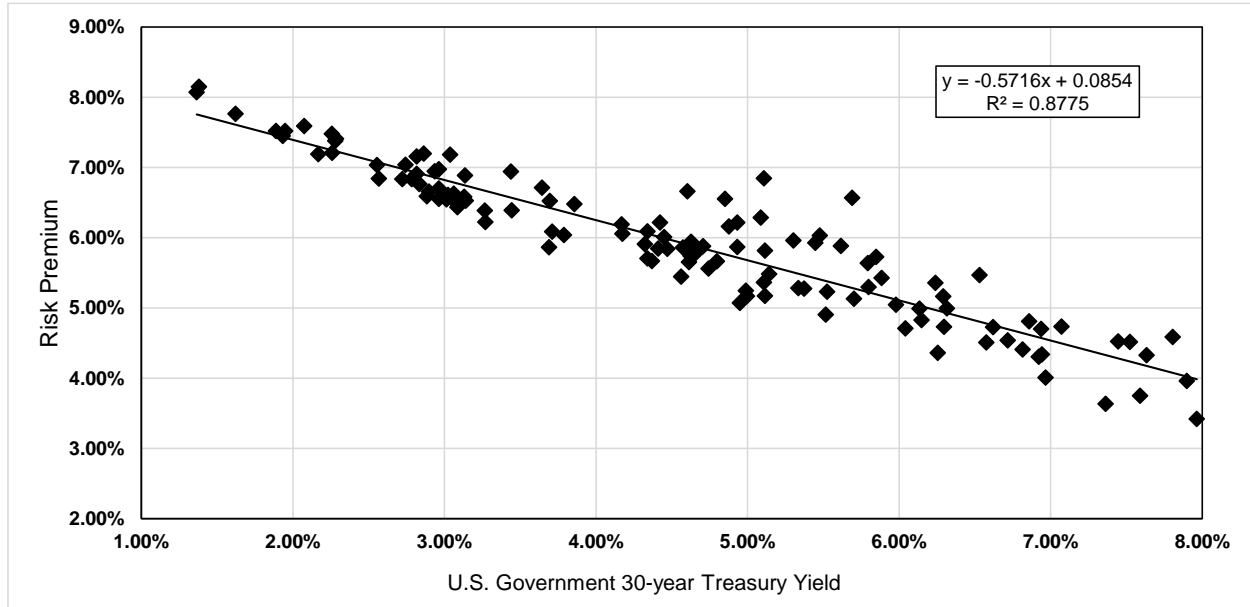
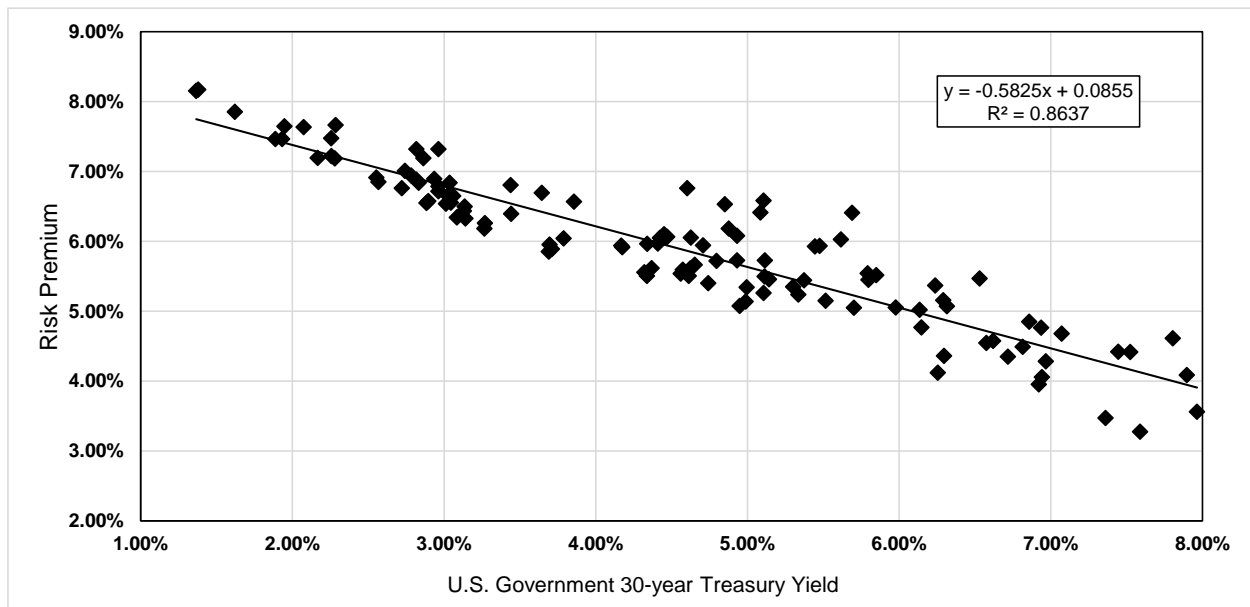


Figure 17: Risk Premium – US Natural Gas Distribution Companies

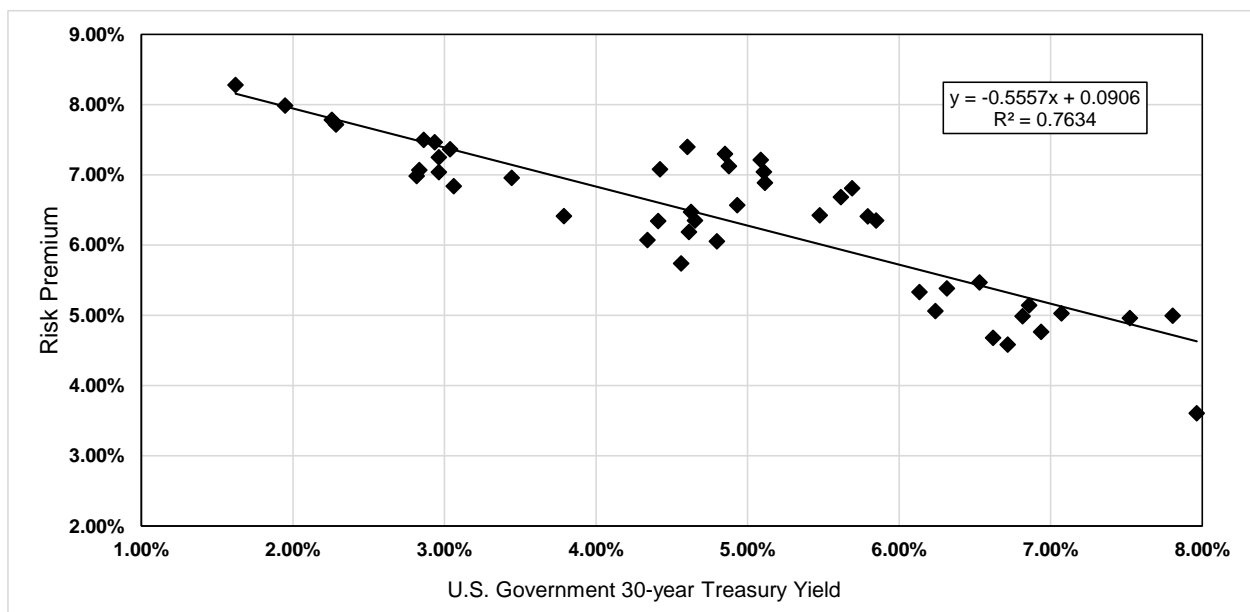


Q. Have you performed another version of the BYRP analysis?

⁶⁴ This analysis screened limited issue rider cases, pipeline transmission-only cases, and cases that were silent with respect to the authorized ROE.

A. Yes. I conducted an analysis similar to the one I just described, with the exception that the allowed ROEs are solely from Wisconsin electric and natural gas utility rate case decisions from 1992 through February 2022. As shown in Figure 18, there is a strong negative relationship between risk premia and interest rates in this analysis as well, and these equation's coefficients are also statistically significant at the 99.00 percent confidence level.

Figure 18: Risk Premium – Wisconsin Electric and Natural Gas Utilities



Interestingly, the intercept of the Wisconsin samples are higher than the national sample (*i.e.*, 0.0906 for Wisconsin utilities vs. 0.0854 for WEPCO proxy group and 0.0855 for WG proxy group). Disregarding variations in interest rates, Wisconsin electric and natural gas utilities are on average authorized a return that is approximately 40 basis points higher than returns authorized nationally. As discussed in Section VII, the Companies have greater volumetric risk and greater risk around cost recovery relative to their respective proxy group companies, the Commission has consistently supported

1 utilities' capital needs, and both S&P and Moody's have identified a credit-supportive
2 regulatory environment as a key strength of the Companies' credit profile.

3 **Q. Based on the relationship between equity risk premia and interest rates, what are**
4 **the results of your BYRP analysis?**

5 A. Figure 19 presents the results of my BYRP analysis based on the current and projected
6 interest rates used in my CAPM and ECAPM analyses: (1) the current 30-day average
7 yield on 30-year U.S. Treasury bonds; (2) the near-term projected 30-year U.S. Treasury
8 bond yield; and (3) the long-term projected 30-year U.S. Treasury bond yield.

9 **Figure 19: BYRP Results**

	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
US Elec & Gas Utilities	9.48%	9.71%	9.99%
US Gas Utilities	9.46%	9.69%	9.97%
WI Elec & Gas Utilities	10.03%	10.27%	10.57%

10
11 **Q. How do the results of the BYRP analysis inform your recommended ROE for the**
12 **Companies?**

13 A. In conjunction with the other ROE models that I have discussed, I considered the results
14 of the BYRP analysis in setting my recommended ROE for both of the Companies. As
15 noted above, investors consider the ROE award of a company when assessing the risk of
16 that company compared to utilities of comparable risk operating in other jurisdictions.
17 The risk premium analysis accounts for this comparison by estimating the return
18 expectations of investors based on the current and past ROE awards of electric and
19 natural gas utilities across the United States, and specifically in Wisconsin.

1 **VII. REGULATORY AND BUSINESS RISKS**

2 **Q. Do the DCF, CAPM, ECAPM and BYRP results for the proxy group, taken alone,**
3 **provide an appropriate estimate of the cost of equity for the Companies?**

4 A. No. These results provide only a range of appropriate estimates of WEPCO's and WG's
5 costs of equity. Several additional factors must also be considered in light of their overall
6 effect on the Companies' risk profiles relative to their proxy groups when determining
7 where the cost of equity falls within the range of results.

8 **Q. How does the regulatory environment affect investors' risk assessments?**

9 A. The ratemaking process is premised on the principle that, for investors and companies to
10 commit the capital needed to provide safe and reliable utility service, the subject utility
11 must have the opportunity to recover the return of, and the market-required return on,
12 invested capital. Regulatory authorities recognize that because utility operations are
13 capital intensive, regulatory decisions should enable the utility to attract capital at
14 reasonable terms; doing so balances the long-term interests of investors and customers.
15 The Companies are no exception. They must finance their operations and require the
16 opportunity to earn a reasonable return on their invested capital to maintain their financial
17 profiles. In that respect, the regulatory environment is one of the most important factors
18 considered in both debt and equity investors' risk assessments.

19 From the perspective of debt investors, the authorized return should enable the
20 Companies to generate the cash flow needed to meet their near-term financial obligations,
21 make the capital investments needed to maintain and expand their systems, and maintain
22 the necessary levels of liquidity to fund unexpected events. This financial liquidity must
23 be derived not only from internally generated funds, but also by efficient access to capital

1 markets. Moreover, because fixed income investors have many investment alternatives,
2 even within a given market sector, the Companies' financial profiles must be adequate on
3 a relative basis to ensure their ability to attract capital under a variety of economic and
4 financial market conditions.

5 Equity investors, on the other hand, require that the authorized return be adequate
6 to provide a risk-comparable return on the equity portion of the Companies' capital
7 investments. Because equity investors are the residual claimants on the Companies' cash
8 flows (which is to say that the equity return is subordinate to debt repayment), they are
9 particularly concerned with the strength of regulatory support and its effect on future cash
10 flows.

11 **Q. How do credit rating agencies consider regulatory risk in establishing a company's**
12 **credit rating?**

13 A. Both S&P and Moody's consider the overall regulatory framework in establishing credit
14 ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory
15 framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4)
16 financial strength, liquidity, and key financial metrics. Of these criteria, regulatory
17 framework and the ability to recover costs and earn returns are each given a broad rating
18 factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent
19 weighting in the overall assessment of business and financial risk for regulated utilities.⁶⁵

20 S&P also identifies the regulatory framework as an important factor in credit
21 ratings for regulated utilities, stating: "One significant aspect of regulatory risk that
22 influences credit quality is the regulatory environment in the jurisdictions in which a

⁶⁵ Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

1 utility operates.”⁶⁶ S&P identifies four specific factors that it uses to assess the credit
2 implications of the regulatory jurisdictions of investor-owned regulated utilities: (1)
3 regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and
4 (4) regulatory independence and insulation.⁶⁷

5 **Q. How does the regulatory environment in which a utility operates affect its access to**
6 **and cost of capital?**

7 A. The regulatory environment can significantly affect both the access to and cost of capital
8 in several ways. First, the proportion and cost of debt capital available to utility
9 companies are influenced by the rating agencies’ assessment of the regulatory
10 environment. As noted by Moody’s, “[f]or rate regulated utilities, which typically
11 operate as a monopoly, the regulatory environment and how the utility adapts to that
12 environment are the most important credit considerations.”⁶⁸ Moody’s further highlights
13 the relevance of a stable and predictable regulatory environment to a utility’s credit
14 quality, noting: “[b]roadly speaking, the Regulatory Framework is the foundation for how
15 all the decisions that affect utilities are made (including the setting of rates), as well as
16 the predictability and consistency of decision-making provided by that foundation.”⁶⁹

17 **Q. Have you evaluated the regulatory framework in Wisconsin relative to the**
18 **jurisdictions in which the operating companies of the proxy group members**
19 **operate?**

⁶⁶ Standard & Poor’s Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities’ Credit Quality—But Some More So Than Others, June 25, 2018, at 2.

⁶⁷ *Id.*, at 1.

⁶⁸ Moody’s Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

⁶⁹ *Id.*

1 A. Yes. I have evaluated the regulatory framework in Wisconsin on four factors that are
2 important in terms of providing a regulated utility an opportunity to earn its authorized
3 ROE. These are: (1) test year convention (*i.e.*, forecast vs. historical test year); (2)
4 method for determining rate base (*i.e.*, average vs. year-end); (3) use of revenue
5 decoupling mechanisms or other tools to mitigate volumetric risk; and (4) prevalence of
6 capital cost recovery between rate cases.

7 **Q. What are the results of your analysis?**

8 A. The results of my regulatory risk assessment are summarized as follows, and the details
9 are shown in Ex.-WEPCO/WG-Bulkey-8c(a) and 8c(b). Specifically:

10 Test Year Convention: WEPCO and WG use a fully-forecast test year in Wisconsin,
11 which is similar to the operating subsidiaries of the companies in the WEPCO Proxy
12 Group and WG Proxy Group. Specifically, approximately 50 percent of the WEPCO
13 Proxy Group companies and 56 percent of the WG Proxy Group companies provide
14 service in jurisdictions that use a fully- or partially-forecast test year.

15 Rate Base Convention: The Companies' rate base in Wisconsin is determined based
16 on a thirteen-month average. Approximately 52 percent of the companies in the
17 WEPCO Proxy Group and 56 percent of the companies in the WG Proxy Group are
18 authorized to use year-end rate base, meaning that the rate base includes capital
19 additions that occurred in the second half of the test year and is more reflective of net
20 utility plant going forward.

21 Volumetric Risk: WEPCO and WG do not have protection against volumetric risk in
22 Wisconsin, either through a revenue decoupling mechanism or a weather
23 normalization adjustment clause. By comparison, 58 percent of the operating
24 companies in the WEPCO Proxy Group and 83 percent of the operating companies in
25 the WG Proxy Group have some form of protection against volumetric risk.

26 Capital Cost Recovery: Unless deferral accounting treatment is sought and granted,
27 WEPCO and WG do not have a capital tracking mechanism to recover capital
28 investment costs between rate cases. However, 59 percent of the operating
29 companies in the WEPCO Proxy Group and 74 percent of the operating companies in
30 the WG Proxy Group have some form of capital cost recovery mechanism in place.

31 Earnings Sharing Mechanism: WEPCO and WG have an earnings sharing
32 mechanism, meaning that any earned return in excess of the authorized return is
33 shared with customers between rate cases. However, only 42 percent of the operating

1 companies in the WEPCO Proxy Group and 39 percent of the operating companies in
2 the WG Proxy Group have some form of earnings sharing mechanism in place.

3 **Q. How have ROE authorizations in Wisconsin, and in particular for the Companies,**
4 **compared to authorized ROEs for electric and natural gas utilities in other**
5 **jurisdictions?**

6 A. The Commission has consistently supported utilities' capital needs. As shown in Figure
7 20, the Commission has historically authorized ROEs that are comparable to, or above,
8 the national average for electric and natural gas utilities during the same period. This
9 sends an important signal to investors that there is regulatory support for financial
10 integrity, dividends, growth and fair compensation for business and financial risk. Both
11 S&P and Moody's have identified a credit-supportive regulatory environment as a key
12 strength of the Companies' credit profiles.⁷⁰

13 **Q. Has maintaining a credit-supportive regulatory environment been particularly**
14 **highlighted for WG?**

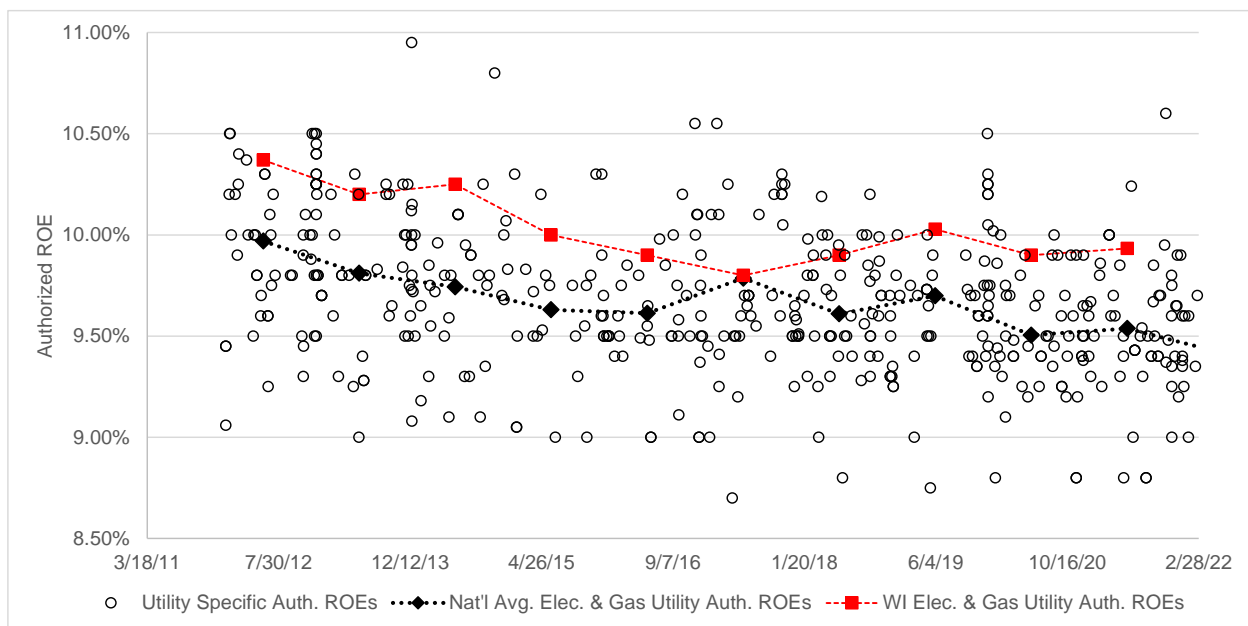
15 A. Yes. As noted, WG currently has a negative outlook from Moody's. In September 2021,
16 when Moody's revised its outlook on WG to negative, it noted that the change was due to
17 concerns regarding delayed cost recovery prompted by WG's rate settlement in 2021 that
18 Moody's viewed as exposing WG's cash flows to "material regulatory lag until at least
19 2023 and weaken its credit metrics over the next 12 to 18 months."⁷¹ Specifically,
20 Moody's highlighted that, in the absence of cost recovery riders in Wisconsin, there was
21 concern about the delayed recovery of deferred expenditures, including amounts related

⁷⁰ Moody's Investor Service, Credit Opinion, December 23, 2021 (also provided as Ex.-WEPCO/WG-Shipman-3); S&P Global Ratings, Ratings Direct, May 26, 2021 (also provided as Ex.-WEPCO/WG-Shipman-4); Moody's Investor Service, Credit Opinion, December 23, 2021 (also provided as Ex.-WEPCO/WG-Shipman-5); S&P Global Ratings, Ratings Direct, May 6, 2021 (also provided as Ex.-WEPCO/WG-Shipman-8).

⁷¹ Moody's Investors Service, Rating Action, "Moody's Affirms Wisconsin Gas at A3; changes outlook to negative," September 20, 2021 (also provided as Ex.-WEPCO/WG-Shipman-7).

to WG’s manufactured gas clean-up program and ongoing capital investment needs such as the construction of its new liquefied natural gas storage facility. Moody’s noted that, despite an improvement in WG’s cash flow from operations before changes in working capital-to-debt ratio, it expected WG’s 2022 financial to be weak for the rating and that “a recovery in financial metrics will be highly dependent on a supportive outcome of the rate case the utility expects to file in 2022.”⁷²

Figure 20: Authorized ROEs for Wisconsin Utilities v. U.S. Average



Q. Do analysts rank the various regulatory jurisdictions in terms of their relative credit supportiveness?

A. Yes. RRA and others provide a ranking of regulatory jurisdictions. RRA assigns a ranking for each regulatory jurisdiction as “Above Average”, “Average” or “Below Average”, and then within each of those categories, a numeric ranking from 1 to 3. Thus,

⁷² *Id.*

1 the RRA rankings for each jurisdiction range from “Above Average/1”, which is
2 considered the most supportive, to “Below Average/3,” which is the least supportive.

3 **Q. How does the supportiveness of Wisconsin regulation compare with the jurisdictions**
4 **where the proxy group companies operate?**

5 A. RRA ranks Wisconsin as an Above Average/2, which is the second highest score of the
6 nine tiers. Other states in this same ranking tier are Florida, Georgia, and Pennsylvania.
7 As shown in Ex.-WEPCO/WG-Bulkey-9c(a) and 9c(b), the average ranking of both the
8 WEPCO Proxy Group and the WG Proxy Group is Average/2, meaning that Wisconsin is
9 generally ranked higher than the average of both proxy groups.

10 **Q. What is your conclusion regarding the relative regulatory risk of WEPCO and WG**
11 **as compared to their respective proxy groups?**

12 A. The Companies have greater volumetric risk and greater risk around cost recovery
13 relative to their respective proxy group companies. All else equal, this would indicate an
14 allowed ROE toward the upper end of the range of ROE results. However, as I
15 determined in reviewing regulatory supportiveness rankings and the allowed returns for
16 Wisconsin utilities in my risk premium analyses, the Wisconsin utilities typically enjoy a
17 slight equity return premium when compared to utilities nationally. So, as other utilities
18 may have lesser risk around cost recovery, the Wisconsin utilities are provided a buffer
19 so that they can weather such risks. This has the added advantage of providing additional
20 credit support for the utilities that will ultimately lower debt costs. In other words, the
21 risks to earnings due to less automatic recovery is generally mitigated by the premium
22 Wisconsin utilities typically earn on their equity.

1 **VIII. CAPITAL STRUCTURE AND COST OF DEBT**

2 **Q. Is the capital structure of a company an important consideration in the**
3 **determination of the appropriate ROE?**

4 A. Yes, it is. Assuming other factors being equal, a higher debt ratio increases the risk to
5 investors. For debt holders, higher debt ratios result in a greater portion of the available
6 cash flow being required to meet debt service, thereby increasing the risk associated with
7 the payments on debt. The result of increased risk is a higher interest rate. The
8 incremental risk of a higher debt ratio is more significant for common equity
9 shareholders who are the residual claimants on the cash flow of a company. Therefore,
10 the greater the debt service requirement, the less cash flow available for common equity
11 holders.

12 **Q. Is it common for regulatory commissions to rely on benchmarking as a check on the**
13 **reasonableness of the capital structure to be used in ratemaking?**

14 A. Yes. Regulatory commissions most often rely on one or two approaches to set the
15 authorized capital structure, and both require some form of benchmarking to industry
16 norms:

- 17 • The operating company's actual (or projected) capital structure per the financial
18 books and records of the company. This approach is generally used when the
19 utility's capital structure reflects the way the company is operated and is generally
20 consistent with industry norms.
- 21 • A hypothetical capital structure, which is used if there are concerns that the
22 utility's actual or projected capital structure is unreasonable or imprudent. A
23 hypothetical capital structure can be based on comparable companies (*e.g.*, set
24 within the range of the proxy group) or determined by the commission based on
25 other risk factors.

26 **Q. What are WEPCO's and WG's proposed capital structures?**

1 A. WEPCO proposes a financial capital structure consisting of 53.00 percent common
2 equity, 41.40 percent long-term debt, 0.34 percent preferred stock and 5.26 percent short-
3 term debt. WEPCO proposes a regulatory capital structure consisting of 54.57 percent
4 common equity, 42.72 percent long-term debt, 0.35 percent preferred stock and 2.36
5 percent short-term debt.

6 WG proposes a financial capital structure consisting of 53.00 percent common
7 equity, 43.20 percent long-term debt, and 3.80 percent short-term debt. WG proposes a
8 regulatory capital structure consisting of 52.71 percent common equity, 43.47 percent
9 long-term debt, and 3.83 percent short-term debt.

10 **Q. Did you conduct any analysis to determine if these requested equity ratios were**
11 **reasonable?**

12 A. Yes. I reviewed the Companies' proposed capital structures relative to the actual capital
13 structures of the utility operating subsidiaries of the companies in their respective proxy
14 groups. Since the ROE is set based on the return that is derived from the risk-comparable
15 proxy group, it is reasonable to look to the average capital structure for the proxy groups
16 to benchmark the equity ratios for the Companies. Specifically, I calculated the mean
17 proportions of common equity, long-term debt, short-term debt and preferred equity over
18 the most recent four years for which data is currently available (*i.e.*, 2017-2020) for each
19 of companies in the proxy groups at the operating subsidiary level.⁷³

20 Ex.-WEPCO/WG-Bulkey-10c(a) and 10c(b) summarize the actual capital
21 structures of the operating subsidiaries of the proxy group. As shown, the average equity

⁷³ The source data for this analysis for the electric and combination utility companies is available by quarter; however, the data available for the natural gas-only utilities is available annually. Therefore, all of the data for this analysis is specified annually.

ratios for the operating subsidiaries of the WEPCO Proxy Group companies range from 44.41 percent to 62.28 percent, with a mean of 53.17 percent. The average equity ratios for the operating subsidiaries of the WG Proxy Group companies range from 44.41 percent to 62.13 percent, with a mean of 55.76 percent. WEPCO's and WG's proposed regulatory capital structure equity ratios are 54.57 percent and 52.71 percent, respectively, and both WEPCO's and WG's proposed financial capital structure equity ratios are 53.00 percent, which are well within the range established by the capital structures of the utility operating subsidiaries of the companies in their respective proxy groups.

Q. Are there other factors to be considered in setting the Companies' capital structures?

A. Yes. The credit rating agencies' responses to market conditions facing utilities must also be considered when determining the equity ratio. For example, S&P continues to maintain a negative outlook for the utility industry in 2022 and has noted that since downgrades outpaced upgrades for a second consecutive year in 2021, for the first time ever the median investor-owned utility credit rating fell to the "BBB" category.⁷⁴ Further, S&P expects continued pressure on cash flows over the near term as utilities continue to increase leverage to fund capital expenditure plans necessary to meet carbon reduction goals and improve safety and reliability. Finally, S&P has also highlighted inflation, higher interest rates and rising commodity prices as additional risks that could further constrain the credit metrics for utilities over the near term.

In regard to inflation S&P recently noted:

⁷⁴ S&P Global Ratings, "For The First Time Ever, The Median Investor-Owned Utility Ratings Falls To The 'BBB' Category," January 20, 2022.

1 Given these observations, and the added concern that inflationary pressure
2 could be accompanied by a rising interest rate environment and wider
3 spreads, we believe that a period of prolonged inflation could further
4 constrain credit metrics for some utilities. Higher rates will also pressure
5 unhedged variable rate borrowings and raise the costs of refinancing fixed-
6 rate debt maturities. This comes as companies in the sector have already
7 added record levels of debt to offset historically high capital spending
8 aimed at modernizing the grid, building new transmission lines, reducing
9 coal generation, and adding renewable power investments.⁷⁵

10 As a result, the credit ratings agencies' continued concerns over the negative
11 effects of inflation and increased capital expenditures underscores the importance of
12 maintaining adequate cash flow metrics for the industry as a whole, and the Companies in
13 particular, in the context of this proceeding.

14 **Q. Is there a relationship between the equity ratio and the authorized ROE?**

15 A. Yes. The equity ratio is the primary indicator of financial risk for regulated utilities such
16 as WEPCO and WG. To the extent the equity ratio is reduced, it is necessary to increase
17 the authorized ROE to compensate investors for the greater financial risk associated with
18 a lower equity ratio.

19 **Q. What is your conclusion with regard to the Companies' proposed capital
20 structures?**

21 A. Considering the actual capital structures of the operating companies in the proxy group,
22 in my view, WEPCO's and WG's proposed regulatory capital structure common equity
23 ratios of 54.57 percent and 52.71 percent, respectively, and proposed financial capital
24 structure common equity ratios of 53.00 percent, are reasonable. The proposed equity

⁷⁵ S&P Global Ratings, "Will Rising Inflation Threaten North American Investor-Owned Regulated Utilities' Credit Quality?," July 20, 2021.

1 ratios are well within the range established by the capital structures of the utility
2 operating subsidiaries of the companies in their respective proxy groups.

3 **IX. CONCLUSIONS AND RECOMMENDATION**

4 **Q. What is your conclusion regarding a fair ROE for the Companies?**

5 A. Figures 21 and 22 provide a summary of the analytical results for the WEPCO Proxy
6 Group and WG Proxy Group, respectively. Based on these results, the qualitative
7 analyses presented herein, the business and financial risks of the Companies compared to
8 their respective proxy groups, and current conditions in capital markets including the
9 expectation for rising interest rates and increase in inflationary pressure, it is my view
10 that an ROE of 10.00 percent as proposed by WEPCO and an ROE of 10.20 percent as
11 proposed by WG are reasonable and would fairly balance the interests of customers and
12 shareholders. These ROEs would enable the Companies to maintain their financial
13 integrity and therefore their ability to attract capital at reasonable rates under a variety of
14 economic and financial market conditions, while continuing to provide safe, reliable, and
15 affordable electric and natural gas utility service to customers in Wisconsin.

1

Figure 21: Summary of Analytical Results for WEPCO

Constant Growth DCF			
	Min Gwth Rate	Mean Gwth Rate	Max Gwth Rate
30-Day Average	8.51%	9.56%	10.18%
90-Day Average	8.52%	9.60%	10.30%
180-Day Average	8.52%	9.60%	10.38%
Constant Growth Average	8.52%	9.59%	10.29%
CAPM			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
Value Line Beta	12.87%	12.92%	12.99%
Bloomberg Beta	11.86%	11.96%	12.08%
Long-term Avg. Beta	10.70%	10.85%	11.04%
ECAPM			
Value Line Beta	13.17%	13.21%	13.26%
Bloomberg Beta	12.41%	12.48%	12.58%
Long-term Avg. Beta	11.54%	11.65%	11.79%
Bond Yield Plus Risk Premium			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
US Elec & Gas Utilities	9.48%	9.71%	9.99%
WI Elec & Gas Utilities	10.03%	10.27%	10.57%

2

Figure 22: Summary of Analytical Results for WG

Constant Growth DCF			
	Min Gwth Rate	Mean Gwth Rate	Max Gwth Rate
30-Day Average	8.42%	9.93%	10.17%
90-Day Average	8.47%	10.02%	10.27%
180-Day Average	8.42%	9.97%	10.22%
Constant Growth Average	8.44%	9.97%	10.22%
CAPM			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
Value Line Beta	11.98%	12.07%	12.19%
Bloomberg Beta	11.71%	11.81%	11.94%
Long-term Avg. Beta	10.62%	10.77%	10.96%
ECAPM			
Value Line Beta	12.50%	12.57%	12.66%
Bloomberg Beta	12.29%	12.37%	12.47%
Long-term Avg. Beta	11.48%	11.59%	11.74%
Bond Yield Plus Risk Premium			
	Current 30-Day Avg Treasury Bond Yield	Near-Term Forecast 30-Yr Treasury Bond Yield	Long-Term Forecast 30-Yr Treasury Bond Yield
US Gas Utilities	9.46%	9.69%	9.97%
WI Gas & Elec Utilities	10.03%	10.27%	10.57%

Q. What is your conclusion with respect to the Companies' proposed capital structures?

A. WEPCO proposes to establish a regulatory capital structure consisting of 54.57 percent common equity, 42.77 percent long-term debt, 0.35 percent preferred stock and 2.31 percent short-term debt, and a financial capital structure of 53.00 percent common equity, 41.45 percent long-term debt, 0.34 percent preferred stock, 2.24 percent short-term debt and 2.98 percent debt equivalents. My conclusion is that these proposed regulatory and financial capital structures are reasonable when compared to the capital structures of the companies in the WEPCO Proxy Group. Likewise, WG proposes to establish a regulatory capital structure consisting of 52.71 percent common equity, 43.47 percent long-term debt, and 3.82 percent short-term debt, and a financial capital structure of

1 53.00 percent common equity, 43.20 percent long-term debt, and 3.80 percent short-term
2 debt. My conclusion is that these proposed regulatory and financial capital structures are
3 reasonable when compared to the capital structures of the companies in the WG Proxy
4 Group.

5 **Q. Does this conclude your direct testimony?**

6 **A.** Yes, it does.